SS 408

OFFICE OF POPULATION CENSUSES & SURVEYS

SOCIAL SURVEY DIVISION

Family Intentions

by Myra Woolf

An enquiry undertaken for the General Register Office

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I am very grateful for the help and advice I received at all stages from a number of individuals and organisations. Particular acknowledgement must be made to members of the Government Social Survey, to past and present members of the General Register Office (both organisations are now part of The Office of Population Censuses and Surveys), to Miss M. Wallis Jones who helped with the initial stages of the enquiry, and above all to all the married women who were interested or concerned enough to participate in this enquiry.

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N.B. 1. Throughout the tables in the report * indicates below 0·5%

2. Figures in brackets indicate that the derived statistics are based on fewer than 50 units

3. Base figures are given in squared brackets in some tables

4. References to statistical significance are made assuming
   (i) that the standard errors of estimates are approximately $1\frac{1}{2}$ times those derived from simple random samples
   (ii) that two tailed tests are used
   (iii) a maximum probability of Type I error (level of significance) of 0·05
   unless otherwise stated

5. Percentage distributions do not necessarily add to 100% because of errors due to rounding

1 INTRODUCTION

1.1 THE ORIGINS OF THE STUDY

In 1965 for the first time since 1955 the number of children born in England and Wales was fewer than in the previous year. The crude birth rate and the legitimate birth rate also declined in that year and continued to decline until, at least, 1968.

TABLE 1.1

Number of live births, the crude birth rate and the legitimate birth rate England and Wales 1954–1968

	Total number of live births (000s)	Live births per 1,000 population of all ages	Number of legitimate live births (000s)	Legitimate live births per 1,000 married women aged 15–44 years
1954	674	15·2	642	104·8
1955	668	15·0	637	103·8
1956	700	15·7	667	108·2
1957	723	16·1	689	111·7
1958	741	16·4	705	114·3
1959	749	16·5	710	115·4
1960	785	17·1	742	120·8
1961	811	17·6	763	123·7
1962	839	18·0	783	125·7
1963	854	18·2	795	126·3
1964	876	18·5	813	128·2
1965	863	18·1	796	125·7
1966	850	17·7	783	123·9
1967	832	17·2	762	120·6
1968	819	16·9	749	118·1

Source: The Registrar General's Statistical Review, 1968, Part II Tables C1 and D1.

What did such a movement in births signify: an arbitrary fluctuation, a change in short-term trends or a long-term change in family structure? Was the decline related to an increase in childlessness, a reduction in family size or was it connected with an increase in the length of the intervals between the births of children within a family? Any or all of these factors would have influenced movements in the birth rates. Or was the decline associated with other events which indirectly affect the number of births occurring in a year and certain other fertility measures, events such as the incidence of marriage and changes in the ages at which women marry? What inferences can be made from such changes in periodic measures of fertility about future numbers of children for whom health, welfare and educational provision will need to be made?

1.2 THE OBJECT OF THE PRESENT INVESTIGATION

The birth rates themselves are notoriously bad guides to basic population trends. Even the legitimate birth rate—defined as the number of legitimate births per 1,000 married women aged 15–44 years—is subject to influences independent of changes in family size and the pattern of family building. It is affected by changes in the ages at which women marry, for example. Movements in certain of the variables which affect the birth rates between 1955 and 1965 and probably since have not been in the direction of a declining rate. For example the ages at which women marry has continued to decline in the relevant decade (Table 1.2) and the proportion of women marrying in each age group has increased (Table 1.3).

TABLE 1.2

Mean age at marriage
England and Wales 1936–1967

Period	All spinsters	All bachelors
1936–40	25·38	27·51
1941–45	24·58	26·76
1946–50	24·54	27·15
1951–55	24·18	26·55
1956–60	23·49	25·90
1961–65	22·90	25·36
1966	22·54	24·88
1967	22·52	24·74

Source: Register General's Statistical Review for the year 1967 Part II, Table L.

TABLE 1.3

First marriage rates by age for spinsters
England and Wales 1951–1967

Marriage rates per 1,000 single population in each age group

	Age group for spinsters								Over 55	Marriage rate per 1,000 population 15 and over
	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54		
1951–55	43·9	231·9	157·2	75·1	38·6	21·1	12·8	7·9	2·1	71·9
1956–60	56·6	264·8	169·9	80·7	37·2	22·6	12·7	7·8	2·2	77·4
1961–65	59·0	257·5	157·7	73·5	38·6	22·0	13·4	8·2	2·2	76·1
1960	57·4	261·7	161·0	75·2	34·8	22·9	13·3	8·1	2·1	76·1
1961	59·8	261·2	162·9	74·7	38·0	21·2	13·6	8·0	2·2	76·2
1962	58·0	258·2	159·4	74·3	38·7	22·0	12·9	8·2	2·2	74·7
1963	57·6	253·2	157·4	74·2	38·6	22·4	13·6	8·1	2·2	74·6
1964	58·2	255·4	155·1	73·0	38·6	22·4	13·4	8·5	2·2	76·0
1965	61·4	259·5	153·7	70·1	39·1	22·0	13·7	8·2	2·2	78·8
1966	66·2	260·2	147·8	72·0	40·9	21·4	14·0	8·2	2·2	81·8
1967†	63·9	250·2	146·2	69·4	37·8	21·7	14·3	8·6	2·1	82·5

Source: Office of Population Censuses and Surveys.

†The decline in 1967 has been maintained in 1968 for spinsters aged 30 to 44 years only.

The changes in all these factors has been in the direction of an *increase* in the period fertility rates. This leaves a decline in ultimate family size or a lengthening of the intervals between births to account for the decline since 1965 in the actual legitimate fertility rate. These two variables are related to some extent: an increase in family size is associated with a decline in the lengths of the intervals between births and vice versa. To disentangle, in part at least, the effects on the fertility rates of changes in ultimate family size from changes in the lengths of intervals between children, recourse was in this instance made to survey data, as birth spacing has not been investigated in any depth since the Family Census of 1946.

In the same way, survey data provide auxiliary information for making assumptions about future trends. Previously, population projection methods have been mainly dependent on retrospective data, which means that changes can be identified and analysed only some time after they have taken place. Any future movements assumed have been based on informed assumptions without any direct evidence about expectations. Thus in "Projecting the population of the United Kingdom"(16) in 1965, future population size up to 1984 was based on the assumption "that completed family size for each age at marriage will continue to increase throughout the period of projection, but more and more slowly as time passes". This assumption was made, having regard mainly to previous trends in family size and birth rates. Other factors such as the continuing rise in real income per head were considered, but there was no attempt to assess their effects quantitively, on family size. Two years later, in December 1967, the projections were based on the assumption that "There is, therefore, no evidence so far of any fall in average completed family size for any given age at marriage, but it seems that the increases in family size assumed last year may have been too high . . . . it seemed reasonable to assume that for a given age at marriage, there would be very little change in completed family size over the projection period from that estimated to have been reached for marriages in the late 1950s" (17). This assumption was again based on past trends, but by this time the decline in the number of births and in the birth rates had become apparent.

By 1969, the first general indications of results of this survey having become available, they were used to supplement the conventional methods of projection, and in general reinforced what otherwise were somewhat tentative inferences being drawn from analysis of current birth patterns. The assumption on which future population size was based became "that completed family sizes for a given age at marriage will increase only for marriages up to about 1960, that thereafter there will be a small decline and that a stable level will be reached for marriages in 1965 and later years"(18). That is, a combination of analyses of past trends and forward-looking survey data can increase the confidence with which a forecast is put forward. The assumptions about a small decline in family size for marriages in the early 1960s might have been made earlier with more assurance and the fall in the birth rate anticipated, if there had been a system for incorporating survey data into the forecasting system already functioning. It was this awareness of a lack of information which led the General Register Office to initiate this study in 1966.

The study owes a great deal to the Growth of American Families (G.A.F.) studies carried out by the Survey Research Center of the University of Michigan and the Scripps Foundation for Research in Population Problems. These studies, carried out in 1955 and 1960, had as their general object the improvement of forecasts of numbers of births in the United States. The study in the United States began with the fact of a rising birth rate. Thus, by 1955, when the first study was carried out(4), it was not known whether the transition to younger childbearing or the fact that younger couples were likely to have more children altogether than older couples was having a greater influence on the birth rate. Between 1957 and 1962 the United States crude birth rate declined. In the main this was attributed to a less favourable age structure in the population but there was also the suggestion that in 1962 there was the possibility of a decline in family size(12, 20). The study in England and Wales began with the knowledge that the birth rates in 1965 had begun to fall. Did this movement parallel the earlier one in the United States with its implications of a declining family size?

1.3 THE METHODS OF THE PRESENT INVESTIGATION

1.3(i) General approach

Information on ultimate family size and more limited information on the intervals between births was to be obtained from married women—on the assumption that they would be the individuals likely to have the most valid knowledge of past, present and future events in this subject area. This initial assumption may be questionable since it could be that husbands are the final arbiters of the sizes of their families, but this was not a proposition we could consider in any detail.

Thus, information was sought from a probability sample* of approximately 6,300 women in England and Wales who had been married once only and were aged below 45 years at the time of the fieldwork.

The information sought fell into five broad categories:

(i) details of the pregnancies and births which have occurred and are expected to occur to these women together with their views on the ideal size of families

(ii) rudimentary information on the physical disabilities affecting the women or their husbands which the women feel might affect their future fecundity

(iii) current contraceptive practice and future intentions in this respect

(iv) details of a material, cultural and psychological nature which from a study of the literature and from preliminary pilot studies appeared to be related to family size

(v) other information which could be used for classification purposes

The object was to set measures of current and final family size in the context of fecundity and contraceptive practice as well as social and psychological circumstances. The structure of the questionnaire was such that many of the implications of having and rearing children were explored implicitly before asking women how many children they expected to have altogether. In this way it was hoped to make the estimates more realistic.

---

*Details of the sample design, selection and deficiencies are given in Appendix A.

Two sets of preliminary interviews were carried out; the first prepilot interviews were unstructured and exploratory. Their purpose was to assess both the kinds of information which would be required to investigate family size and whether this information could be obtained validly in an interview situation. The second pilot interviews carried out with 200 randomly selected married women in fifteen areas incorporated the findings of the first interviews in a more structured form. The information was analysed in detail particularly so that the attitude measures could be constructed. These interviews took place during the early months of 1967. The fieldwork for the main investigation took place between July and December 1967.

1.3(ii) The analysis of data

The main object of the study was to obtain data on likely changes in family size for couples married at different dates (that is, for the different marriage cohorts). In general, the tables in this report present the data for each cohort without any form of standardisation. That is, actual differences in, say, family size are presented even though they may derive not from 'real' differences in family size between the cohorts but from differences in the structure of the cohorts—from, say, differences in the ages at which women married in the various cohorts or in the social class structure of the cohorts. Actual differences are presented because, from the point of view of future population movement, it was of greater importance to chart the size of the changes as they are likely to occur rather than explore their origins.

However, a few of the basic tables concerned with expected size of family were standardised with respect to the different ages at which the women married, but the results led to no alteration of the general conclusions with regard to the underlying trends in family size. Therefore, standardisation was not carried out as a general process, but in many of the tables data are given separately for the different age-at-marriage groups as a guide to likely changes in expected family size should the age at which women marry change substantially in the future.

1.3(iii) Measures of family size and structure

The information from the questionnaire was used to compile measures of ultimate family size and the pattern of family building.* "Expected Family Size" was the concept used as a measure of final family size for each woman. Briefly, this is a combination of the number of living children each married woman had at the time of the investigation and the number of children she estimated, when carefully questioned, she would have in the future. Three estimates based on this concept were made: minimum, maximum and most likely family size. The latter—in most cases it was the arithmetic average of the other two estimates—was most frequently used in the analysis.

The extent of the correlation between an individual's estimate of her expected family size and her eventual final family size is not known, but it is suspected to be low. A study published in 1957(8), based on interviews first carried out twenty years earlier among engaged couples, gave the correlation between *desired* family size and the number of children the women had had within the twenty-year period as 0·27, which indicates poor agreement. On the other hand, if groups rather than individuals are considered over a relatively short period as in the second G.A.F. study(14), then it can be shown that the average number of births expected by women in the period 1955–1960 was very close to the number actually achieved by a parallel sample of women interviewed in 1960. For women without any known fecundity impairment the two estimates coincided: an average of 0·9 births was expected and 0·9 births were achieved. In part, this was the result of a fortuitous cancelling of opposite errors. Younger wives with little education tended to underestimate the number of births they would have, college-educated Catholic wives tended to overestimate the number of births they would experience in that period. This suggests that, considered in the aggregate, expected family size may well provide a valid measure of ultimate family size, and may also do so for certain sub-groups in the population. However, there is always the possibility that such a cancelling of errors may be unique to that particular U.S. study. Hence, a more objective measure of ultimate family size based on the characteristics of the families was also compiled for this study. This measure was labelled "predicted family size" and is discussed below.

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*Definitions of the concepts and measures used are to be found in Appendix C. The detailed questionnaire is available on request from the Social Survey Division of the Office of Population Censuses and Surveys.

Three measures were used to assess the changing patterns of family building:

(a) the number of years between live births

(b) the number of children born within the first five years and the first ten years of marriage

(c) the wife's age by which the family is expected to be completed

Measures reflecting the way in which families are built up tend to be unsatisfactory. For example, the length of the interval between specific live births can only be computed for those women who have experienced the appropriate parity; the length of the interval between first and second live births is confined to those who have already experienced their second birth and the final mean length of the interval will be affected by future second births. Hence, the mean lengths of the interval have to be assessed with reference to the proportion of women who have experienced the particular birth. Similarly, the number of children experienced within specific lengths of marriage have to be considered in relation to the number of children expected. An increase over time in the number of children born within the first five years of marriage could be evidence of changes in final family size as well as changes in the pattern by which families are built up.

Fecundity and contraception

To set women's intentions in a more realistic context, questions were asked about their fecundity and their use of contraception. Since the main purpose of this investigation was the study of future movements, the concern was with estimates of future fecundity and present and future use of contraception. The measures of future fecundity relied on the women's own opinion of their condition together with information about any medical opinion they said they had consulted. With the resources available, no attempt could be made to check, . medically, the opinions put forward by the women.

Questions on the use of contraception referred specifically to its use by the husband as well as by the wife although information was sought only from the wife. Details of the methods of contraception used was obtained by reference to a card which had printed on it descriptions of the more usual methods, each identified by a number. The women were asked to intimate the contraceptive methods they used or intended to use by the number. We found no difficulties with the respondents in obtaining the information in this way but the technique does, of course, reduce the possibility of women volunteering any information on the less acceptable methods of family limitation which they or their husbands might be using. There is also the possibility that the less literate women may have been unable to recognise, in print, the methods of contraception they were using.

Further details of the measures of fecundity and contraception used for the analysis of data in this study are in Appendix C.

Social and attitude measures

The main variables considered in relation to family size and structure were income, relative income, social class, religion, social mobility, age at which full-time education was completed, as well as the more obvious measures such as ages at which the couple married and the length of their marriage. These measures are considered at greater length in Section 5 of this report, and details of the measures are given in Appendix C.

The attitude measures originated with a series of unstructured interviews carried out with women with the object of investigating their feelings toward motherhood, children and families. It becomes very obvious that the dimensions of attitudes concerned with such a subject were numerous and could not be encompassed within a single study. Nevertheless, statements made by the women were recorded and analysed* and more comprehensive measures along particular dimensions were built up using factor analysis. Five main attitude areas were identified and included in the study although they by no means accounted for all the variation in attitudes expressed by the women. These five attitudes appear to express the ideas that

(a) children are an encumbrance

(b) there is a concern with overcrowding and over-population

(c) material considerations are relevant where children are concerned

(d) motherhood and children are satisfying

(e) children need siblings and training in sharing

For the sake of brevity these attitudes have been referred to in the report as antipathy to children, fear of overcrowding, material conditions, partiality to children and socialization, respectively. They are discussed more fully in a later section of the report and the definitions are in Appendix C.

"Completed" families

For some analyses, it was necessary to postulate a "completed" family. This, of course, cannot be specified without error until a woman reaches the end of her child-bearing life, but official data suggest that most families are complete after 10–15 years of marriage. Thus an attempt was made to define a completed family by taking into account such factors as the intention to have more children, the data at which the last child was born, the duration of the marriage and the use of contraception. Excluded from the category of completed families, for the analyses, were those women who were sterile with respect to the future or had been married before 1960 and had no living children while not using any methods of family limitation. Details of the definition are given in Appendix C. The definition of a completed family was an exclusive one and the group is unlikely to contain any incomplete families, but the group labelled "incomplete families" may well contain within it families which eventually prove to have been complete at the time of the investigation.

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*Dr. A. N. Oppenheim's advice on this part of the study is gratefully acknowledged.

Prediction of ultimate family size

As well as analysing the data with the object of assessing changes in expected family size for women married at different times, an attempt was made to predict final family size mainly as a check on the expectations expressed by the women. In the first instance, data on women married before 1960 who said that they expected no further children were investigated for variables related to final family size. Since most of these women had been married for ten years or more, it is not unreasonable to assume that most had, in fact, completed their families. In both this and other studies(13, 14), certain variables such as religion and the age at which the woman married were strongly related to family size: earlier marriage and affiliation with the Roman Catholic church were associated with larger families. Within these categories, the variation in final family size must be accounted for by other characteristics or by random fluctuations.

To simplify the analysis, the prediction was carried out only for women who married between the ages of 20 and 24 years and who were not (and whose husbands were not) Catholics. For this group, the predicting relationship was replicated by carrying out the analysis separately for those married between 1950 and 1954 and those married between 1955 and 1959. Variables which appeared to be related to final family size were combined by the technique known as discriminant analysis so that the resulting function best discriminated between families of different sizes. In the event, the function operated most efficiently, that is, with the minimum proportion of misclassifications, when distinguishing between women with families of two or fewer children and those with three or more. The derived relationship was then applied to women who had married after 1959 so that predictions of their final family size could be made and compared with their stated expectations. The discussion and findings relating to this part of the investigation are to be found in Section 6.

1.4 THE QUALIFICATIONS THAT ATTACH TO THE FINDINGS

Because of the particular definition of the population adopted for this study and because of the practical difficulties arising in the sampling operation, certain qualifications need to be borne in mind when considering the generality of the conclusions. These limitations do not affect the basic conclusions but, in certain cases, the particular figures quoted as being applicable to certain groups must be regarded as approximate.

1.4(i) Definition of the population

The population investigated in this study is defined as all married women under the age of 45 years married once only. The following problems then arise:

(a) Common-law marriages. It is impossible in a voluntary investigation carried out by interviewers to question a woman closely on the exact nature of her marital status if she describes herself as married. Hence, common-law wives regarding themselves as married and provided they are "first marriages" for these women have been included in the study. Women holding the same status but considering themselves single, widowed or divorced, were excluded.

(b) Since women over the age of 44 years were omitted from the investigation, the earlier date-of-marriage cohorts in this study are not a probability sample of women marrying at those dates. For example, women marrying at the age of 30 years in 1945 would be about 52 years of age at the time of the investigation and would, therefore, be excluded from the study. The groups *excluded* from the various date-of-marriage cohorts are:

Date of marriage	*Group omitted*
Before 1949	Those married at 23 years or older (approx.)
1950–1954	Those married at 28 years or older
1955–1959	Those married at 33 years or older

Obviously, for the later cohorts, the omissions are of decreasing importance since they constitute a declining proportion of those cohorts. From the point of view of *future* births, all the omissions are of little importance since most of the women excluded would be past the child-bearing period but for comparisons in, say, expected family size, the estimates for the earlier cohorts would be affected by the omissions and one would expect the 'true' value for these groups to be slightly lower than the values computed for this study.

(c) Women who claimed to be married but who were permanently separated from their husbands were not asked about the number of children they expected to have in the future; the estimates would be subject to too many unknown factors.

1.4(ii) Sampling problem

20,800 addresses were selected as sampling units, anticipating they would yield between 8,000 and 8,500 married women under the age of 45 years and interviews with some 7,500. In the event, it was established that there were 7,454 married women under the age of 45 years at these addresses. Of the 7,454 married women, 283 had been married previously and so the interviews were discontinued. The sample contacted, then, was 7,171 and of these 6,248 were interviewed fully and 58 partially Hence the analysis was based on interviews with 6,306 (once) married women under the age of 45 years.

However, the fact that fewer women were identified as members of the defined population than had been expected, together with an age distribution of married women which was different from the Registrar General's estimates, led to the suspicion that the method of selecting and contacting eligible women was not comprehensive and that anything between 500 and 1,000 women had been omitted from (or had put themselves outside) the sample. An intensive check in two areas by very experienced interviewers failed to reveal the nature or even the existence of the deficiencies. However, the groups most affected seemed to be married women under the age of 20 years and between 40 and 44 years. The effect of this shortfall is considered further in Appendix A.

1.5 THE FORM OF THE REPORT

Apart from the Introduction, this report falls into six sections, numbered:

2. Family Size: a discussion of the changes in ideal and expected family size for the different date-of-marriage cohorts and the investigation of family types whose size is expected to decline or increase.
3. Patterns of Family Building; an investigation of internatal intervals for the cohorts and of the number of children born within five and ten years of marriage and of the age at which the wife *expects* to complete her family.
4. Limitations on Fecundity: the investigation of women's opinions on any impairments to future fecundity and of the extent of voluntary limitation of fertility by the use of contraception.
5. Fertility Differentials: a brief study of the individual variables related to final family size for those women who have "completed" their families, with special regard to the attitude measures.
6. Predicting family size: the use of discriminant analysis for deriving a predicting relationship and its application to women married after 1959 who have not completed their families.
7. Summary and Conclusions.

2 FAMILY SIZE

2.1 INTRODUCTION

The object of this investigation is, primarily, to assess changes in family size over time. Since families are not completed until some ten to fifteen years after marriage, estimates of changing trends lag behind events. In order to keep up with events, or even to anticipate them, some measure related to final family size needs to be attempted. For this reason we have asked women about their ideal family size and the number of children they expect to have, anticipating that there is some connection between expected family size particularly and ultimate family size. This connection is considered below and investigated further in Section 6 of this report.

This section is devoted to the opinions of women on their ideal and expected family sizes and the different marriage cohorts are investigated to see whether these ideals and expectations presage any changes in past trends.

The extent to which such ideals and expectations become a reality depends not only on the degree of control which women can exercise over their fertility but probably on a number of external factors, such as the state of the economy(1), for example, which might induce changes in ideals as well as in what actually might happen.

This seems to illustrate the compound nature of the concept of ideal family size. Two distinct influences appear to affect people's views. First, there are the norms prevailing in the community. In England and Wales, it appears to be acceptable to have between two and four children. Over half the married women investigated thought that a family of two children was ideal for families like themselves; 40% considered that four children would be ideal for families without "money worries". In terms of population growth, however, this distinction between a family of two and a family of four is critical. If the norms were to increase, the whole distribution of ideal family size could be expected to shift upwards and vice versa. In this study, we deal very little with the accepted standards of family size although Freedman(5) suggests this might be the more important problem from the world population point of view. Such a study would require a cross-cultural or at least a historical perspective.

This study is concerned, in the main, with the second set of influences on family size. What are the current standards in a community and, given the current standards, what distinguishes families who conform to the standard from those who have more or fewer children? With the possibility of greater control over their fertility (considered in Section 4), are more women likely to conform to the norms and what are the sizes of families to be expected? Perhaps most critically, what distinguishes the family with two children from that with three? Assuming that such factors are not completely random, one would like to know which factors 'result' in a third child.

As a first step, this section of the report considers changes in women's views on ideal size of family and the size of family they expect to have both from cohort to cohort and at different stages of the marriage—as reported retrospectively by the women. The whole of this section relies on statements by married women about their ideals and expectations. In a later section (Section 6), statements on expected family size will be compared with predicted family size—these predictions being based on variables which appear to be related to final family size.

The reliance on statements of future intention inevitably produces conclusions which are tentative rather than definitive. Studies(10, 14) suggest that whereas individual desires are a poor guide to the final outcome for an individual, in respect of family size, in the aggregate the average family size for the whole population is closely anticipated by the average size expected a short time previously. For example, the G.A.F. study(14) found that the mean number of children expected by fecund women in the period 1955–60 was 0·9 while the mean number actually produced by a comparable independent sample in 1960 was 0·9. This equivalence was probably due to fortunate cancelling out of error produced by an overestimate of the number of children expected by the young, middle-class Catholic matrons in the population and an underestimate given by those with least education. Nevertheless, for married women as a whole, the average number of children per married woman aged 18–39 years produced in the five years 1955–1960 was remarkably close to the average number expected.

Yet it needs to be remembered that concepts like "ideal family size" relate to ideals at the time of the investigation and refer to different lengths of marriage experience. Those who are nearing the end of their child-bearing experience may need to rationalise their ideals by making them conform to their experience; a woman with a large number of children that she had not anticipated may not like to think that she cannot control events, nor may she now feel that she wants to reject any of her children. Hence her ideal family size may well be larger now than it would have been had she been asked at the outset of her marriage—not because of changing social conditions or a changing ethos but because of her own position in the marriage continuum. Conversely, someone newly married has ideals about family size unrelated to experience and may well change her views later. The same problems exist even if women are asked about opinions they held at a uniform time—the number of children desired at the time they married, for example. Those married earlier are less likely to remember accurately or be realistic about the views they held at that time.

It is with these qualifications in mind that we go on to look at changing ideals and expectations as pointers to possible changes in actual family size.

2.1(i) Measures used

In this section we are concerned with three concepts and the relationship between them:

(a) Ideal family size
(b) The number of children women *expect* to have and
(c) The number of living children women had at the time of the investigation and its relationship to the number of pregnancies experienced by these women.

Most of the analysis has been carried out in the form of differences between mean numbers of children per married women in the appropriate sub-groups. It seems worth pointing out that identical means can be obtained from dissimilar distributions. Thus a mean of 2·0 is obtained if 50 women expect to have one child and 50 expect to have three. A mean of 2·0 is also obtained if all 100 women expect two children. Comparability of means tells us nothing of the actual distribution of numbers. In the tables, distributions of family size are given for the different marriage cohorts, but not necessarily for all the sub-groups. The data are available, if required. Similarly, standard deviations which do provide a measure of the spread of the distributions have been computed but have been omitted from the tables for the sake of clarity. Again, they are available if required. The base numbers used for the computation of means have also been omitted from the main tables for the same reason, but they can be found in Appendix B.

The object in using these measures analysed in this way is to see whether women married more recently are likely to have larger or smaller families than those married earlier, assuming they are in a position to carry out their intentions.

2.2 IDEAL FAMILY SIZE

An average of 3·4 children is considered to be ideal "if they (the couples) had no particular worries about money or anything like that" affecting the family. This average derives mainly from a concentration on 2 (22% of women), 3 (22%) or 4 (41%) children as the ideal. The same statistic was found in the U.S.A. in 1960(14) and similar results were found in 1966(4).

TABLE 2.1

Number of children considered ideal for families with "no particular worries about money . . " (analysed by date of marriage)

Number of children	All groups	Date of marriage					
		–1945	45–49	50–54	55–59	60–64	65 or later
	%	%	%	%	%	%	%
0	*	—	—	*	*	*	—
1	*	—	*	*	*	*	*
1 or 2	—	—	—	*	—	—	—
2	22	20	19	20	23	25	24
2 or 3	2	3	3	2	2	2	2
3	22	15	21	19	20	25	28
3 or 4	1	3	1	1	1	1	1
4	41	43	43	44	43	38	34
4 or 5	*	—	*	*	*	*	1
5	3	5	3	3	3	3	5
6	5	7	6	6	5	3	4
7	*	1	*	1	*	*	*
8 & over	1	2	1	1	1	*	*
D.K./N.A.	2	2	2	2	2	1	1
Base (number of women)	6306	193	968	1370	1501	1564	706
Mean number of children	3·4	3·7	3·5	3·5	3·5	3·3	3·3

However, in the current study, women married in different periods exhibit differences in what they consider to be the ideal number of children. There is a general decline in the mean number considered ideal from those married before 1945 (3·7 children) to those married in 1960 or later (3·3). This is brought about by a decline in the proportion of women who consider four children an ideal size of family when there are no financial limitations. Some of this difference could be attributed to the different ages at which women in the different cohorts married. However, if each age-at-marriage group is considered separately (Table 2.2), the number of children considered ideal regardless of financial or other restrictions was lower for those married between 1960 and 1964 compared with those married in the 1950s and remained stable at this lower level for those married after 1964. It is possible that a slightly different pattern is exhibited by those who married between 25 and 29 years of age—the ideal number appears to be constant for all women married since 1955.

TABLE 2.2

Mean number of children considered ideal for families with "no particular worries about money . ." (analysed by wife's age at marriage and date of marriage)

Date of marriage	Wife's age at marriage				
	All ages	Under 20	20–24	25–29	30 and over
All dates	3·4	3·5	3·4	3·4	3·4
Before 1945	3·7	3·6	3·8	—	—
45–49	3·5	3·6	3·5	(3·5)	—
50–54	3·6	3·6	3·6	3·5	(2·7)
55–59	3·5	3·5	3·4	3·4	(3·4)
60–64	3·3	3·3	3·5	3·4	3·5
65 or later	3·3	3·3	3·3	3·4	(3·3)

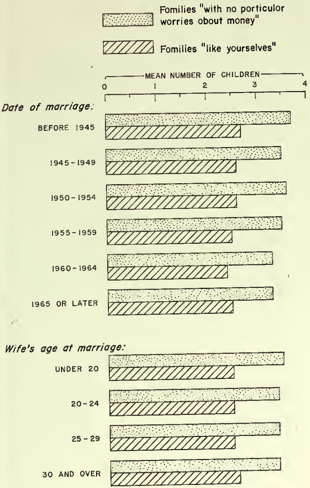
TABLE 2.3

Number and mean number of children considered ideal for families "like yourselves" (analysed by wife's age at marriage and date of marriage)

Date of marriage	Number of women	All ages at marriage Number of children				Wife's age at marriage				
		1 or fewer	2*	3	4 or more**	All ages	Under 20	20–24	25–29	30 and over
		Percent of women				Mean number of children				
All dates	6306	2	60	24	13	2·5	2·5	2·5	2·5	2·6
Before 1945	193	1	55	23	20	2·7	2·6	2·7	—	—
45–49	968	2	54	26	16	2·6	2·7	2·6	(2·8)	—
50–54	1370	2	57	23	17	2·6	2·6	2·6	2·5	(2·5)
55–59	1501	2	61	23	13	2·5	2·5	2·4	2·6	(2·8)
60–64	1564	2	66	22	9	2·4	2·4	2·4	2·5	2·5
65 or later	706	1	63	27	8	2·5	2·5	2·4	2·5	(2·4)

*includes 0·1% who said "1 or 2" and 1·6%–2·0% who said "2 or 3"
**includes 0·4%–0·9% who said "3 or 4"

FIG. 2.1 **MEAN NUMBER OF CHILDREN WIVES CONSIDER IDEAL FOR:**



Of course, the decline could be attributed to rationalisation on the part of the women; those who married earlier are more likely to have completed their families and achieved a number in excess of their earlier ideal. They may since have modified their opinion to take account of their larger families. However, this explanation is more likely to affect the replies in which women were asked to state their ideal number of children for "families like yourselves". Here again, the mean numbers declined for most cohorts until 1964 and then stabilised. The apparent increase for the 1965 cohort is not statistically significant. For those married between the ages of 20 and 24 years, the decline exhibited by those married between 1955 and 1959 resulted in a mean number which was maintained by the later cohorts. Again those married at 25 or older were different in that there was no obvious decline in ideal family size.

In passing it may be worth noting that for all sub-groups, the mean number of children considered ideal for families without "particular worries about money or anything like that" was approximately one greater than the mean considered ideal for families "like yourselves". On the whole the differences between the means on these measures were smallest for those whose husbands were in the managerial group and largest for those with husbands in the manual group. Presumably, for more of the managerial group the terms families "like yourselves" and families without "particular worries about money . . . ." were synonymous.

TABLE 2.4

Mean numbers of children considered ideal
(a) for families with "no particular worries about money . . ."
(b) for families "like yourselves"

(analysed by the husband's socio-economic group and the wife's age last birthday)

Wife's current age	Husband's socio-economic group							
	Managerial		Other non-manual		Skilled manual		Other manual	
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
Under 20	(2·9)	(2·3)	(3·4)	(2·3)	(3·5)	(2·5)	(3·6)	(2·5)
20–24	3·4	2·6	3·2	2·4	3·2	2·4	3·3	2·4
25–29	3·3	2·4	3·3	2·4	3·4	2·4	3·5	2·5
30–34	3·3	2·6	3·4	2·6	3·6	2·4	3·4	2·4
35–39	3·5	2·6	3·4	2·6	3·5	2·6	3·7	2·7
40–44	3·4	2·6	3·7	2·6	3·5	2·5	3·7	2·6

The reasons given for expressing particular views about ideal family size may, of course, be rationalisations but at least they indicate what might be considered acceptable reasons for having more or fewer children. Those who said that they thought that three or fewer children were ideal for families without "particular worries about money . . . ." were asked why they thought some people had more than that number. Altogether just over half the respondents replied in terms that suggested that these families like children and this reaction increased in frequency (to about 63%) among those most recently married. The idea that it "just happens" was expressed by 28% of respondents—but this was of decreasing importance among the recently married.

Some examples of answers are:

No. 817 64 026 21 years of age. Married 1964 2 children.	I don't really know. Most don't care, they don't take any precautions and they just happen. They are poorer people and can't afford to take any precaution.
No. 909 81 004 38 years of age. Married 1956 5 children.	People have children because they like them and really to give their brothers and sisters companionship and it's good for them to have brothers and sisters. It helps mould their character. Well I think a large family makes you feel more independent, you are able to help one another.

Looked at in relation to the husband's socio-economic group, there is an interesting mixture of reactions.

TABLE 2.5

Reasons why people are said to have more than three children (analysed by husband's socio-economic group)

		Husband's socio-economic group			
	Total	Managerial	Non-manual	Skilled manual	Other manual
	%	%	%	%	%
No answer	6·4	5·0	3·5	6·7	9·8
They like children	53·7	58·6	58·1	52·8	46·9
It just happens	28·4	28·4	28·2	29·5	26·4
Don't take precautions	34·0	34·9	35·4	33·5	33·2
Lack of knowledge about contraception	15·5	24·0	18·7	12·4	10·8
Religious reasons	15·4	20·3	19·7	12·8	11·8
They can afford more	8·5	9·5	8·0	8·2	8·6
Come from large families	2·3	2·6	3·2	1·8	2·0
Grew up in small family	1·8	2·8	2·2	1·7	0·7
To have children of each sex	2·9	2·8	3·8	2·6	3·0
To obtain state benefits	3·9	2·8	4·7	3·3	5·1
Can't afford contraceptives	0·5	1·1	0·3	0·5	0·3
Good for the children	0·8	1·1	1·5	0·3	0·8
Good for the parents	1·3	3·0	1·3	0·5	1·3
Irresponsible	5·7	6·9	6·2	5·6	3·8
Other answer	3·0	4·3	3·3	2·1	3·3
Base (Those who consider three or fewer children ideal)	2959	538	599	1196	603

Lack of knowledge about contraception was said to be an important reason for 'large' families by women whose husbands were in the managerial group. "To obtain state benefits" was a reason cited relatively more frequently by women with husbands in the manual group compared with others.

If more than three children was considered to be the ideal, the reasons for having *less* than this number tended to emphasise the expense.

For example:

No. 506 13 006 22 years of age Married 1966 No children	Well, money. Well I suppose they think about two is enough to handle.

No. 506 02 005 43 years of age Married 1946 3 children	Different circumstances. These who don't want to go through the experience again if they have had a bad time with the first time—Finance and some young people don't want to stay in when they are young.

74% of all those who thought more than three children was the ideal number mentioned finance as the reason for some people having a smaller number of children. Limited accommodation, ill-health, the desire not to be tied down and a general disinclination to have any more children were other reasons given for having families below what the respondent considered to be ideal for families in general.

2.2(i) Changes in ideals

It was pointed out earlier that it is to be expected that a woman's view of an ideal family size may well depend on the stage she has reached in bearing and bringing up a family. In order to isolate differences between marriage cohorts from such differences to be expected during the child-bearing cycle, women were asked about their views on family size at specific times: at marriage, after the birth of their first child and also for their husband's views at marriage and at the time of the interview. Again, the views given may be affected by the different lengths of time which have passed between the events and the date of the interview. And the views of the husband are as reported by the wife. But they have been analysed by the different marriage dates and a consistent pattern showing a fall in numbers of children for consecutive marriage cohorts similar to that for current ideal numbers adds weight to the hypothesis that, if possible, women married in the early 1960s would prefer to have smaller families than those married earlier and that this has been maintained throughout their married life.

TABLE 2.6

Mean number of children considered ideal (analysed by date of marriage)

Date of marriage	(a) for families like themselves "now"	(b) by the wife at marriage	(c) by the husband at marriage	(d) by the husband "now"
All dates	2·5	2·7	2·5	2·7
Before 1945	2·7	2·8	2·6	2·9
45–49	2·6	2·8	2·6	2·7
50–54	2·6	2·8	2·6	2·8
55–59	2·5	2·7	2·5	2·7
60–64	2·4	2·6	2·4	2·5
65 or later	2·5	2·7	2·5	2·5

First, it ought to be pointed out that differences are small and not necessarily all significant (statistically) at the 95% level, but a consistency in trends does suggest that larger samples may yield statistically significant if not substantial differences.

TABLE 2.7

Those who have living children
Mean number of children considered ideal
(analysed by date of marriage)

Date of marriage	(a) for families like themselves "now"	(b) after the birth of the first child
All dates	2·5	2·2
Before 1945	2·7	2·3
45–49	2·6	2·2
50–54	2·6	2·2
55–59	2·5	2·2
60–64	2·4	2·2
65 or later	2·5	2·3

The slight fall exhibited in the mean ideal for families like themselves is paralleled by the fall in the mean number considered ideal by the wife and husband at marriage. But the decline is more pronounced particularly for the post-1959 cohorts if we consider what the husband was said to think ideal at the time of the interview. For the post-1959 cohorts, the mean ideal for families "like yourselves" and the mean number of children the husband wanted "now", were similar. According to the wives, husbands married in the 1950s now wanted a number higher than the wives' ideal, but husbands married after 1959 are said to want a number similar to the number considered ideal by their wives.

It is also interesting to speculate about the difference between the number of children wanted at marriage and "now". For almost all cohorts, the mean number considered ideal by the wife at marriage was greater than the number considered ideal for families "like yourselves" at the time of the interview, while for husbands in the earlier cohorts the mean number of children wanted at marriage was lower than the mean number wanted "now". In fact, the numbers wanted by the husband at marriage are very similar to the number considered ideal for families "like yourselves". However, there are too many unanswered questions to enable any conclusions to be drawn about who, in a family, influences its size.

For those with living children, differences were also considered between the ideal for families "like yourselves" and the number wanted after the birth of the first child (Table 2.7). For all cohorts, there was a decline in the number wanted after the birth of the first child compared with the ideal for families "like yourselves" but the number was remarkably stable from cohort to cohort. For those with living children, the mean ideal for families "like yourselves" showed the same marginal decline for those married between 1960 and 1964 as for all married women under 45 years.

Throughout all these measures with the exception of the number of children considered ideal after the birth of the first child, there has been a decline in the mean number considered ideal by those married between 1960 and 1964 compared with marriages in the 1950s. In most cases, the figure for those married after 1964 reverted to the size considered ideal by those married in the late 1950s.

Thus the decline in family size will not necessarily continue for marriages taking place in 1965 or later. The consistency in the pattern does suggest that opinions about what constitutes an ideal family size varies according to the date of marriage and that the opinions of the cohorts bear a similar relationship to each other at different points of the marriage, although the specific values may change. If, at marriage, a cohort considers that an ideal family should be smaller in size than the previous cohort, this difference is probably exhibited throughout the marriage. It suggests that the family size considered ideal relative to other cohorts is determined at or prior to marriage and remains consistent throughout.

To investigate the more obvious decline in the mean number of children wanted by the husband "now", exhibited by those married in 1960 or later, the data were analysed by the wife's age at marriage.

TABLE 2.8
Mean number of children "now" wanted by husband (analysed by wife's age at marriage and date of marriage)

Date of marriage	All ages	Wife's age at marriage			
		Under 20	20–24	25–29	30 and over
Before 1945	2·9	2·8	3·1	—	—
45–49	2·7	3·2	2·6	(2·7)	—
50–54	2·8	3·2	2·7	2·4	(2·2)
55–59	2·7	3·0	2·6	2·4	(2·7)
60–64	2·5	2·5	2·5	2·4	(2·3)
65 or later	2·5	2·5	2·5	(2·7)	(1·6)

From this table it becomes apparent that the most pronounced decline in the mean number of children "now" wanted by the husband occurs among those couples where the wife was married in 1960 or later under the age of 20 years. That is among those married more recently, where the wife was under 20 years at marriage, the husbands were said to want fewer children than similar couples married earlier. Whether this is an accurate transmission of the husband's views or whether the views are the wife's attributed to her husband, is impossible to distinguish. But the differences in a view of the ideal expressed by the wife on her own behalf and on her husband's behalf, particularly for the different cohorts, suggest that there would be a value in obtaining the opinions of the husbands directly. For most cohorts, the mean number of children wanted by the husband was closer to the mean family size *expected* (Section 2.3) than the ideal expressed by the wife.

The number of children women expect to have and the number they consider constitutes an ideal family is, in many cases, different, although for the sample as a whole the mean ideal number for families "like yourselves" was 2·5 children compared with a mean number of children expected of 2·6. The main differences occur in the various age-at-marriage groups; those who married before they were 20 years expect to have, on average, more children than they consider to be ideal. This applies particularly to the earlier cohorts (where their expectations are more likely to conform to reality). Those who married at 30 years or older expect to have fewer children than they consider ideal.

The women in the sample were questioned rigorously on the number of children they expect to have in the future. Apart from a simple question about this number, some indication of how strongly they felt they would, in fact, have this number was obtained together with estimates of minimum and maximum number and the dates when they thought they would have these children. The answers to these questions were amalgamated to produce three estimates of the number of children women expect to have: the minimum number of children expected in total, the maximum number and the most likely number. Further details of these concepts are given in Appendix **C**.

The *minimum* number expected in total was considered to be the number of children living at the time of the interview for those women who said it was impossible or difficult for them to have any more children or the smallest number of children expected by those who said they had no difficulty in having children. The *maximum* number was obtained by considering the largest number of children said to be expected by all groups, including those women who at the time of the interview said that they did not intend to have any more children but who said that changed circumstances might make them alter this intention. The *most likely* number was derived, in the main, from the arithmetic mean of the minimum and maximum estimates where the informant was not sure about the number she had given in answer to the various questions. Where she was "very sure" about the number given, this number was taken as the most likely estimate of the number of children she expects to have in total. Apart from the analysis immediately following, discussion related to expected family size is carried out in terms of the most likely number of children expected.

2.3 EXPECTED FAMILY SIZE

2.3(i) Minimum, maximum and most likely estimates of expected family size

Married women under the age of 45 years expect to have, on average, a family of a minimum of 2·2 children, a maximum of 2·8 children and a most likely average of 2·6 children. (Table 2.9).

TABLE 2.9

Number and mean number of children expected altogether
(a) minimum number (b) maximum number (c) most likely number

(a) Minimum number and mean minimum number of children expected (analysed by wife's age at marriage and date of marriage)

Date of marriage	Number of women	All ages at marriage Number of children					Wife's age at marriage				
		0	1	2	3	4 or more	All ages	Under 20	20–24	25-29	30 and over
		Percent of women					Mean number of children				
All dates	6306	8	20	41	18	13	2·2	2·5	2·1	1·8	1·2
Before 1945	193	4	16	34	23	23	2·7	2·6	3·0	—	—
45–49	968	9	20	34	17	20	2·4	3·0	2·2	(2·4)	—
50–54	1370	8	18	34	20	19	2·4	3·0	2·3	1·9	(1·7)
55–59	1501	7	16	41	21	14	2·2	2·6	2·2	1·9	(1·7)
60–64	1564	9	21	49	15	5	1·9	2·1	1·9	1·7	1·0
65 or later	706	8	30	51	8	3	1·7	1·8	1·7	1·6	(0·8)

(b) Maximum number and mean maximum number of children expected (analysed by wife's age at marriage and date of marriage)

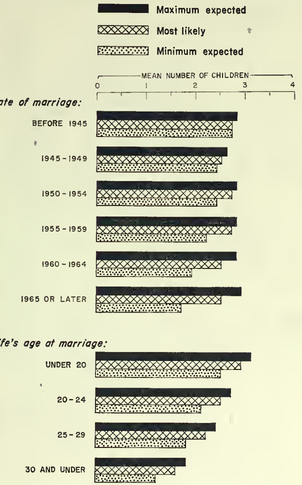
Date of marriage	Number of women	All ages at marriage Number of children					Wife's age at marriage				
		0	1	2	3	4 or more	All ages	Under 20	20–24	25–29	30 and over
		Percent of women					Mean number of children				
All dates	6306	4	10	32	25	26	2·8	3·1	2·7	2·4	1·8
Before 1945	193	4	15	33	26	23	2·8	2·7	3·0	—	—
45–49	968	6	18	32	18	25	2·6	3·2	2·4	(2·5)	—
50–54	1370	5	14	32	21	27	2·8	3·4	2·7	2·1	(1·7)
55–59	1501	4	8	32	25	29	2·8	3·2	2·8	2·4	(2·1)
60–64	1564	3	6	34	31	25	2·8	2·9	2·8	2·7	1·6
65 or later	706	3	3	31	34	28	2·9	3·0	3·0	2·7	(1·8)

(c) Most likely number and mean most likely number of children expected (analysed by wife's age at marriage and date of marriage)

Date of marriage	Number of women	All ages at marriage Number of children					Wife's age at marriage				
		0	1	2	3	4 or more	All ages	Under 20	20–24	25–29	30 and over
		Percent of women					Mean number of children				
All dates	6306	5	12	35	30	19	2·6	2·9	2·5	2·2	1·6
Before 1945	193	4	15	33	26	23	2·7	2·6	3·0	—	—
45–49	968	7	19	31	20	23	2·5	3·2	2·3	(2·5)	—
50–54	1370	6	15	32	22	25	2·7	3·3	2·6	2·0	(1·7)
55–59	1501	4	10	34	30	23	2·7	3·1	2·6	2·3	(1·9)
60–64	1564	3	8	39	37	12	2·5	2·7	2·5	2·4	1·4
65 or later	706	3	6	43	41	8	2·5	2·5	2·6	2·4	(1·5)

The difference between these three estimates was, of course, smallest for those who had been married longest and whose final family size was most closely related to the number of living children they had at the time of the study. The more recent the marriage, the greater the difference between the minimum and maximum estimates of family size. For those married after 1960, average family size is likely to vary between approximately two and three children—a crucial difference for the future size of the population—with a *most likely* mean of 2·5 children. The comparable mean for those married between 1955 and 1959 is 2·7 children. The decline is not large but is statistically significant. For the post-1959 cohorts, the decline in the mean *minimum* expected size of family is the result of a decline in the proportion of women expecting four or more children and an emphasis on a minimum of one or two children. The same swing away from four or more children is apparent in the *most likely* estimate, but the increase is in the proportion of women expecting two or three children. The proportion of women expecting a family of one child as the "most likely" number has declined consistently for the later cohorts. The proportion expecting a *maximum* of two children or four or more children remained similar from cohort to cohort while an increasing proportion expect a maximum of three. Thus for each cohort, less than 30% of the women expected to have at the very most families of four or more in size.

FIG. 2.2 MEAN NUMBER OF CHILDREN EXPECTED



Differences in the decline in mean numbers of children expected are exhibited by the women marrying at different ages: the fall in the mean number of children expected is most pronounced for those marrying under the age of 20 years while the estimates for the numerically more important group of those marrying between the ages of 20 and 24 years fall in the minimum category, rise in the maximum and produce a stable "most likely" estimate for each cohort. If this fall in the mean number of children expected by those who marry under 20 years is maintained, the increasing proportion of women marrying at this age may result in an even greater fall from cohort to cohort. However, this study provides no evidence to support or refute this hypothesis.

Perhaps it should be pointed out here, that the estimates for the different cohorts have not been standardised with respect to the different ages at which women married. Thus the difference between the most likely mean of 2·7 children expected by women married in 1955–59, and 2·5 children expected by women married in 1960–64 could be brought about by the differing composition, with respect to age at marriage, of each cohort, Standardising these estimates on the basis of the composition of the 1955–59 cohort would still produce the same estimates. Since standardisation produces estimates which are very little different from those produced by the "real" population, and there is a value in having the estimates based on the "real" population, the standardising procedure has been omitted. However, as in Table 2.9, estimates have been produced for the different age-at-marriage groups as a guide to the likely changes in overall estimates should the cohorts differ radically in their composition in the future.

It is unlikely, then, that the fall in the mean most likely number of children expected by those marrying after 1959 is accounted for by differences in the age-at-marriage structure of each cohort. It is more likely to be due to an actual fall in expectations particularly for those marrying under 20 years of age after 1959. The question remains and will be considered in Section 4 whether these women are likely to achieve their lower expectations.

2.3(ii) Number of living children and most likely size of family

The family size expected is a function of the number of children the women had at the time of investigation. The longer the marriage, the greater the number of children each woman is likely to have and the less likely she is to expect children in the future. Hence expected family size is more likely to provide a valid measure of ultimate family size for the earlier rather than the later cohorts. To separate the components of the measure of expected family size, we look first at the number of children born alive and still living at the date of the investigation and then at the number of children expected in the future.

33% of respondents had two children, 23% had one, 15% had three while 17% (almost two-thirds of those married in 1965 or later) had no children at the time of the investigation. The mean number of living children declined, of course, for the later cohorts. These estimates, given to two decimal places, together with an estimate of the number of children expected in the future are given in Table 2.11. Two estimates of total expected family size are also given: one derived from the summation of mean children still alive and mean number expected in the future, and the other essentially the same concept but calculated from each individual's situation, which was then averaged.

TABLE 2.10

Number and mean number of living children
(analysed by wife's age at marriage and date of marriage)

Date of marriage	Number of women	All ages at marriage Number of children					Wife's age at marriage				
		0	1	2	3	4 or more	All ages	Under 20	20–24	25–29	30 and over
		Percent of women					Mean number of children				
All dates	6306	17	23	33	15	11	1·9	2·2	1·8	1·6	1·0
Before 1945	193	4	15	34	23	23	2·7	2·6	3·0	—	—
45–49	968	9	20	34	17	20	2·4	3·0	2·2	(2·3)	—
50–54	1370	9	18	34	20	19	2·4	2·9	2·3	1·8	(1·7)
55–59	1501	9	18	41	20	12	2·1	2·5	2·1	1·8	(1·6)
60–64	1564	19	32	37	11	2	1·5	1·7	1·4	1·3	0·9
65 or later	706	62	35	4	—	—	0·4	0·6	0·3	0·4	(0·2)

The estimates of family size for those married before 1945 are probably the most reliable since most of the women already have the family they expect. On average, they expect only an additional 0·05 child per woman—perhaps more easily interpreted as only 5 out of 100 women in this group expecting one additional child. Similarly, for those married between 1945 and 1949, 15 out of every 100 women expect an additional child while for those married in 1965 or later 42 out of 100 have on average one child and each of the 100 expects an additional two children while 5 out of this 100 expect a third child in the future.

As we have seen earlier, mean expected family size is lower for the post-1959 cohorts, particularly for those married under 20 years of age. If it is argued that this group is the most likely to underestimate the number of children it might have, because of the longer period it is "at risk" during marriage, it can be seen that those who married at this age before 1945 expect to have and are likely to have, on average, a family smaller in size (2·6–2·7 children) than those who married between 1945 and 1949 (3·2 children) and more comparable to the expectations of those marrying after 1959 (2·5–2·7 children). It is probable that the lower expectations of the "Before 1945" cohort is the result of separation during the 1939–45 war. However, this explanation is unlikely to be applicable to the 1945–49 cohort which expects, on average, a smaller family than the 1950–54 cohort. Thus those who marry before the age of 20 are able to control their fertility since there had been a positive increase for the 1950–54 cohort and the expectations of a family size smaller than that expected by the 1950–59 cohorts are not necessarily unrealistic for the 1960 or later cohorts.

However, for the post-1959 cohorts, those who married younger did have, at the time of the interview, a higher mean number of living children. Whether this reflects a higher ultimate family size or a different pattern of family building —a smaller interval between children, for example—remains to be investigated.

2.3(iii) Numbers of children expected in the next "five years"

Women who intended to have more children were asked when they thought they might have them. This information was analysed to produce an estimate for the mean number of children to be born to these women between 1967 and 1972.

TABLE

Mean number of living children, children expected in the future,
(analysed by wife's age at

Date of marriage	Wife's age at marriage									
	All ages					Under 20				
	Mean number of children					Mean number of children				
	Still alive	Expects in future†	Total	Expects in total†	Expects in next 5 yrs.	Still alive	Expects in future†	Total	Expects in total†	Expects in next 5 yrs.
All dates	1·87	0·70	2·57	2·58	0·42	2·18	0·73	2·91	2·91	0·44
Before 1945	2·74	0·05	2·79*	2·74*	0·00	2·64	0·07	2·71*	2·64*	0·00
45–49	2·38	0·15	2·53	2·54	0·03	3·00	0·18	3·18	3·17	0·05
50–54	2·36	0·28	2·64	2·65	0·07	2·89	0·37	3·26	3·27	0·10
55–59	2·11	0·54	2·65	2·66	0·26	2·48	0·58	3·06	3·07	0·32
60–64	1·45	1·03	2·48	2·49	0·72	1·68	0·98	2·66	2·66	0·65
65 or later	0·42	2·05	2·47	2·48	1·45	0·59	1·92	2·51	2·52	1·36

*This discrepancy is brought about by one woman with seven living children who did not know the size of family she expected in total. She is included in the computation for mean number of children "still alive" but omitted from the remaining computation

†'most likely' number

Questions were also asked about the age or date women intended to complete their families. This information is discussed further in Section 3. Here we merely note the number of children said to be expected by married women under 45 years in the five-year period following the interview.

In average terms, 42 out of every 100 married women under the age of 45 years expects to have one child within this period (Table 2.11). This varied from an average of 3 per 100 for those married between 1945 and 1949 to 55 per 100 expecting one child in the period and 45 expecting two, for those married in 1965 or later.

2.3(iv) Expectations and the characteristics of women and their families

More details of the particular groups who expect a smaller family would help in evaluating the reasonableness of such expectations. In this section we look further at the variables associated with a decline in the mean expected family size for the post-1959 cohorts. Perhaps one ought to say at the outset that substantive differences are small and that the discussion is confined to such differences as are statistically significant at the 95% level.

In the previous section, the decline was seen to be greatest for those who married under the age of 20. In this section, four variables and their relationship with family size are considered initially: the number of living children, religion, educational level as measured by the age at which full-time education was completed and the husband's socio-economic group.

2.11

children expected in total, children expected in the "next five years" marriage and date of marriage)

Wife's age at marriage														
20–24					25–29					30 or older				
Mean number of children					Mean number of children					Mean number of children				
Still alive	Expects in future†	Total	Expects in total†	Expects in next 5 yrs.	Still alive	Expects in future†	Total	Expects in total†	Expects in next 5 yrs.	Still alive	Expects in future†	Total	Expects in total†	Expects in next 5 yrs.†
1·83	0·70	2·53	2·53	0·42	1·57	0·67	2·24	2·23	0·37	0·98	0·58	1·56	1·58	0·33
2·95	0·02	2·97	2·97	0·00	—	—	—	—	—	—	—	—	—	—
2·19	0·14	2·33	2·34	0·03	(2·31)	(0·12)	(2·43)	(2·47)	0·00	—	—	—	—	—
2·30	0·28	2·58	2·58	0·07	1·83	0·18	2·01	2·00	0·03	(1·71)	(0·00)	(1·71)	(1·71)	(0·00)
2·07	0·55	2·62	2·62	0·28	1·79	0·47	2·26	2·25	0·14	(1·58)	(0·31)	(1·89)	(1·93)	0·14
1·40	1·11	2·51	2·51	0·80	1·34	1·04	2·38	2·37	0·72	0·86	0·52	1·38	1·38	0·24
0·34	2·21	2·55	2·55	1·53	0·39	1·97	2·36	2·35	1·45	(0·21)	(1·30)	(1·51)	(1·52)	(1·00)

Expectations and the number of living children

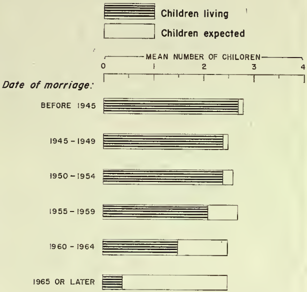
TABLE 2.12

Mean most likely number of children expected (analysed by number of living children and date of marriage)

Date of marriage	Number of living children					
	All groups	0	1	2	3	4 or more
All dates	2·6	1·6	1·9	2·4	3·4	4·9
Before 1945	2·7	(0·3)	(1·0)	2·1	(3·0)	(5·1)
45–49	2·5	0·2	1·1	2·2	3·2	5·1
50–54	2·7	0·5	1·3	2·2	3·3	5·0
55–59	2·7	0·9	1·7	2·5	3·5	4·7
60–64	2·5	1·6	2·2	2·7	3·6	(4·5)
65 or later	2·5	2·4	2·6	(2·8)	—	—

The decline in mean most likely family size is only apparent among those who at the time of the investigation already had at least four living children; of these couples, those who married more recently expect to have, on average, a smaller family than those who married earlier. This applies even if we ignore the earlier cohorts which, because of the defined population, exclude women who married older and who would be expected to reduce the cohort mean of 5·1 children. The most significant part of this decline, however, occurred to women who married in the late 1950s and not particularly to those who married in the early 1960s.

FIG. 2.3 **MEAN NUMBER OF CHILDREN LIVING AND CHILDREN EXPECTED IN THE FUTURE — BY DATE OF MARRIAGE**



Expectations and religion

TABLE 2.13

Mean most likely number of children expected (analysed by religion and date of marriage)

Date of marriage	Religion: All groups	Husband & Wife: Christian but not Catholic	Wife: Catholic Husband: other Christian	Husband: Catholic Wife: other Christian	Husband & Wife: Catholic	Husband & Wife: non-Christian*	Other combinations
All dates	2·6	2·5	2·7	2·9	3·1	2·4	2·7
Before 1945	2·7	2·6	(3·7)	(3·7)	(3·4)	(2·4)	(3·0)
45–49	2·5	2·5	(2·9)	(2·7)	2·9	(2·5)	(2·6)
50–54	2·7	2·5	2·6	3·1	3·4	2·5	(3·2)
55–59	2·7	2·6	2·5	3·0	3·0	2·6	2·9
60–64	2·5	2·5	2·7	2·7	2·9	2·2	2·5
65 or later	2·5	2·5	(2·5)	(2·6)	2·9	2·3	(2·3)

* including atheist, agnostic

Religious differences reflected in expected family size are as anticipated. Couples where either both partners or one partner is a Catholic expect to have, on average, larger families than other couples (with possible exception of other marriages of mixed allegiances). From cohort to cohort, expected family size is most likely to decline after 1959 for couples where both partners are non-Christian (including those who claim no religion or describe themselves as atheists or agnostics) or where the allegiances are described as "other combinations" (that is, husband and wife claim different allegiances which are not described by the other categories). There has also been a decline among Catholic couples, but it has been more gradual and dates from marriages in the late 1950s rather than the 1960s.

Expectations and educational level

TABLE 2.14

Mean most likely number of children expected (analysed by age full-time education completed and date of marriage)

Date of marriage	Age completed full-time education: All groups	Husband and wife both under 15	Husband under 15 Wife 15	Husband under 15 Wife 16 or over	Husband 15 Wife 15 or under 15	Husband 15 Wife 16 or over	Husband 16 or over Wife 15 or under 15	Husband and Wife 16 or over
All dates	2·6	2·6	2·7	2·4	2·6	2·5	2·5	2·5
Before 1945	2·7	2·8	(2·6)	(3·6)	(2·6)	(2·0)	(2·8)	(2·3)
45–49	2·5	2·6	(2·5)	(2·2)	2·3	(2·1)	2·3	2·7
50–54	2·7	2·7	2·9	2·4	2·9	(1·9)	2·6	2·4
55–59	2·7	2·2	2·5	(2·6)	2·8	2·8	2·6	2·6
60–64	2·5	(2·2)	2·4	(2·0)	2·5	2·5	2·4	2·6
65 or later	2·5	(2·6)	(2·9)	(1·7)	2·5	2·3	2·4	2·5

Considering first those groups where the husband completed his education at 15 years of age or older, the couples married after 1959 expecting a smaller family than the immediately preceding cohort are those where the husband, but not necessarily the wife, completed full-time education at 15 years and not later. There is also a suggestion that the groups where the husband but not the wife completed education over the age of 15 years is also subject to a decline in expected family size between the late 1950 and early 1960 cohorts, but the difference is not statistically significant at the 95% level on samples of these sizes. Only among groups where both husband and wife completed their education over the age of 15 years is there *no* suggestion of a decline between the 1950s and early 1960s.

Those groups where the husband completed his education under the age of 15 years are, of course, declining in numbers for the more recent marriages and, in any case, tend to be older than average if marrying recently. Any differences in their expected family size may be a function of the age at which they marry and not necessarily of their educational level. Hence they have not been considered further in this section.

Expectations and husband's socio-economic group

The difference in trend exhibited by those who finished their full-time education at 16 years or later is repeated when expected family size is analysed by the husband's socio-economic group (Table 2.15). Here, there is no suggestion that the mean expected family size for couples where the husband works in a managerial capacity is likely to fall for the later cohorts.

TABLE 2.15

Mean most likely number of children expected
(analysed by husband's socio-economic group and date of marriage)

Date of marriage	Socio-economic group				
	All groups	Managerial	Non-manual	Skilled manual	Other manual
All dates	2·6	2·5	2·4	2·6	2·8
Before 1945	2·7	(1·9)	(2·7)	2·9	(3·0)
45–49	2·5	2·3	2·3	2·5	3·1
50–54	2·7	2·5	2·4	2·8	2·8
55–59	2·7	2·5	2·5	2·7	2·8
60–64	2·5	2·6	2·4	2·5	2·6
65 or later	2·5	2·6	2·4	2·4	2·5

The most obvious decline in expected family size between the 1955–59 and the 1960–64 cohorts occurs for both manual groups, the decline for the skilled manual group dating perhaps from the early 1950s while for the non-skilled manual groups there has been a general decline through the post-war years which became more evident for those who married after 1959. It is interesting to speculate that if the expectations are borne out in reality and if the movements illustrated here continue for, say, the next ten years, the conventionally accepted association between mean family size and occupational group will be replaced by one in which the highest mean family size may be associated with managerial occupations. Certainly there is no evidence here to suggest that couples in the managerial group married in the 1960s expect a smaller family than those married in the 1950s. Since these are couples whose children probably experience the greatest degree of dependency in terms of the length of their education, it is difficult to accept the hypothesis$^{(19)}$ that a possible increase in the length of dependency consequent upon the acceptance in principle of the Robbins Report on Higher Education and the announcement of the raising of the compulsory school-leaving age to 16 exerted some influence on parents "such as to affect the fertility rate in a downward direction". The "causes" of the decline probably lie elsewhere than in the increasing length of childhood.

Expectations and the length of time in paid employment

One further variable is considered here: the length of time since marriage that women have been in paid employment. Table 2.16 suggests that the longer women work, the smaller will be the expected size of family. However, other evidence suggests that the relationship is not a direct one. Many of the women who have a longer work experience are likely to be sub-fecund and therefore have smaller families. Changes over time can therefore only be tentative and are related to the incidence of sub-fecundity. But a comparison of those who worked proportionately less of their married lives with those who worked proportionately more suggests that the greatest decline in expected family size after 1959 is to be found among those who have worked for a smaller proportion of their married lives. Thus there is no evidence to suggest that changing work patterns among married women will affect the size of their families. Rather it is those who worked least relative to the length of their marriages after 1959 who expect to have smaller families, compared with similar groups in the earlier cohorts.

TABLE 2.16

Mean most likely number of children expected
(analysed by length of time in paid employment and date of marriage)

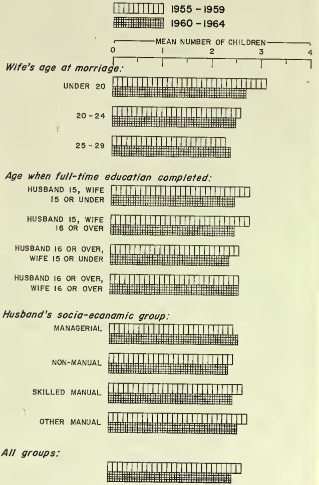
	Length of time in paid employment			
Date of marriage	All groups	Worked least* relative to length of marriage	Worked about half* of married life	Worked more than half* of married life
Before 1945	2·7	3·5	(2·5)	2·1
45–49	2·5	3·0	2·4	1·8
50–54	2·7	3·1	2·4	1·6
55–59	2·7	3·0	2·4	1·7
60–64	2·5	2·7	2·3	2·2
65 or later	2·5	2·5	—	2·2

*"least" defined as Married 1962–67 and worked for up to one year
Married 1957–61 and worked for up to three years
Married 1952–56 and worked for up to four years
Married 1951 or earlier and worked for up to six years

"about half" defined as Married 1957–61 and worked 4–6 years
Married 1952–56 and worked 5–8 years
Married 1951 or earlier and worked 7–10 years

"more than half" defined as Married 1962–67 and worked two or more years
Married 1957–61 and worked seven or more years
Married 1952–56 and worked nine or more years
Married 1951 or earlier and worked eleven or more years.

FIG. 2.4 MEAN MOST LIKELY EXPECTED FAMILY SIZE FOR THOSE MARRIED IN:



These analyses on the characteristics of couples in the 1960 cohorts who expect to have smaller families than similar couples who married earlier suggest that this decline is anticipated most by couples where the wife married under the age of 20 years, by those who at the time of the investigation already had four or more children, by couples with husbands in manual occupations and where the husband completed his education at 15 years of age. It is also expected by particular religious groups, mainly the non-Christian group and couples of mixed Christian and non-Christian allegiances. For the purpose of evaluating the likely movements in ultimate family size, we need to look at these groups in greater detail to assess any fecundity limitations which may affect them and, more important, their ability to control their fertility. This is considered in Section 4 of the report and a brief review of the relationship between the number of pregnancies experienced by women in different socio-economic groups and the number of their living children is given in Section 2.5 to see whether some groups are disproportionately subject to wasted pregnancies which would affect their ability to achieve the size of family they expect.

Meanwhile, some measure of the likelihood of groups realising their expected family size is given by considering the relationship between ideal and actual family size. It seems reasonable to suppose that those groups whose actual family size is in excess of their ideal may well suggest the groups whose final family size may exceed their expectations.

2.4 DIFFERENCES BETWEEN IDEAL AND ACTUAL FAMILY SIZE

Although, on average, women considered that the ideal size of family for people like themselves (a mean of 2·5 children) was lower than the number they wanted at marriage (2·7 children) and considerably lower than the ideal for couples with "no particular worries about money or anything like that" (3·4 children), certain couples do show deviations from this pattern. Some couples in fact have a larger number of children than their stated ideals. As a pointer to the groups which may in the future have more children than they considered ideal—and hence possibly exceed their expectations—the characteristics of the present couples in this situation have been examined. The analysis has been confined to completed* families in order to compare ideal with actual size of families.

One important qualification attaches to the findings based on this analysis: since the analysis is confined to those who have completed their families, that is, those who were married earlier, the external conditions affecting this group will not be the same as those affecting the groups who are in the process of family building. In particular the availability of the contraceptive pill may affect the groups who, previously, had been less successful in controlling their fertility.

To simplify the analysis, the comparisons of actual family size are with the general ideals which tend to be greater by 1·0 child than the ideal for families "like yourselves"; and with the number of children wanted at marriage.

Table 2.17 shows that 10% of couples whose families can be said to be complete in fact had a greater number of children than they consider to be ideal for families with "no particular worries about money . . . .". Most women have fewer than this ideal—on average, one child fewer than this general ideal. As the age at which women marry rises, the discrepancy between the general ideal and the actual family size increases. Women married under 20 come closest in family size to the general ideal of families without "particular worries about money . . . ." but this is one child more than ideal for families like themselves. Women with completed families who had married at an early age were more likely to have a family size in excess of their ideal number.

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*See Section 1.3 for a note on the qualification attached to certain interpretations of this concept.

TABLE 2.17

Completed families

Percentage of married women whose actual number of children differed from the ideal for families with "no particular worries about money . . ."

(analysed by age at marriage)

	Age at marriage				
	All ages	Under 20	20–24	25–29	30 and over
	%	%	%	%	%
Has fewer children than considered ideal	62	54	63	70	(79)
Has number considered ideal	28	31	28	24	(17)
Has greater number than considered ideal	10	15	10	6	(4)
Base	2720	586	1317	269	48
Mean difference	−1·0	−0·7	−1·0	−1·3	(−1·6)

(negative sign indicates informant has fewer children than considered ideal)

Comparison of family size with the number of children wanted at marriage shows that a higher proportion—24% of women whose families can be said to be completed—had families larger in size than they wanted at marriage. (Table 2.18).

TABLE 2.18

Completed families

Percentage of married women whose actual number of children differed from number wanted at marriage

(analysed by age at marriage)

	Age at marriage				
	All ages	Under 20	20–24	25–29	30 and over
	%	%	%	%	%
Has fewer children than wanted at marriage	38	31	40	45	52
Has number wanted at marriage	38	37	38	39	(29)
Has greater number than wanted at marriage	24	32	22	15	(18)
Base	1987	526	1187	240	34
Mean difference	−0·2	+0·0	−0·3	−0·5	(−0·7)

(positive sign indicates informant has more children than wanted at marriage, a negative sign indicates fewer children than wanted)

Taking all women however, they had on average 0·2 children fewer than they wanted at marriage. Nevertheless, there are indications that women married under 20 years may be likely to have more children than they wanted at marriage. The question remains whether the more effective contraceptive methods available since 1960 will reverse the tendency to have more children than the number wanted at marriage by those who married early.

One further summary analyses, for completed families, the relationship between ideal family size (this time for families like themselves) and actual family size. The analysis is confined to those who have two or more living children because it also introduces the answers to a question which asked informants whether at the time of the birth of their last child they had more children than they really wanted. It was considered inappropriate to ask this question of those who had fewer than two children although it might be applicable in some cases.

TABLE 2.19

Completed families with two or more children
Percentage of married women who had more or fewer children than considered ideal for families like themselves, and who had wanted/not wanted their last child
(analysed by number of living children)

	Number of living children		
	2	3	4 or more
	%	%	%
Those who now have more children than ideal for themselves	1	41	73
Those who now have equal or fewer children than ideal but:			
last child not wanted	2	7	5
last child wanted	90	48	18
last child : don't know whether wanted	6	4	1
Unclassifiable	1	1	3
Base	996	468	315

73% of married women with four or more children had more children than considered ideal for families like themselves and a further 5% although not in excess of their ideal said that they had not wanted their last child. More surprisingly, almost half of those with three children considered that they had more than the ideal number of children or had not wanted their third child.

Certainly the measures analysed in this section suggest that in the past women marrying early and women with four or more children have come closest to exceeding or exceeded their ideals in completing their families. A disproportionate number of them, compared with other groups, have more children than they consider ideal either for families in general or more particularly for families like themselves. This suggests there is a desire for smaller families among these groups. Since this is the group who in later cohorts also *expect* to reduce their family size, compared with the earlier cohorts, the extent to which these couples are likely to do so depends on the strength of their motives—which is difficult to assess—and on changes in the availability of means for carrying out their intention.

2.5 NUMBER OF LIVING CHILDREN AND NUMBER OF PREGNANCIES

Throughout the previous analysis concerning expected family size, no allowance was made for child deaths; that is, the number of children expected in the future was considered to be the same as the total number of pregnancies to be experienced in the future. This is obviously not a realistic assumption. For the total population of married women, the mean number of pregnancies experienced to produce one child living at the time of the interview was 1·16 (or 116 pregnancies to produce 100 children living at the time of the interview) while the mean number of live-born children needed to produce one child still living at the time of interview was 1·03.

Variations between sub-groups were examined to see whether any particular groups had been subject to considerably more "wastage" in this respect than others and hence would be less likely to achieve their expected family size. In fact differences between groups in the mean number of pregnancies required to produce a "still living" child was not substantial. One table showing the variations by the husband's socio-economic group illustrates this.

TABLE 2.20

Mean number of pregnancies in relation to number of living children (analysed by husband's socio-economic group)

Number of living children	Husband's socio-economic group			
	Managerial	Non-manual	Skilled manual	Manual
0	0·2	0·2	0·3	0·2
1	1·3	1·3	1·2	1·3
2	2·3	2·3	2·3	2·4
3	3·3	3·3	3·3	3·4
4	4·8*	5·1*	4·4	4·4
5 or more			6·2	6·5

*4 or more still-alive children

In every ten women without living children, two–three have been pregnant once, on average. On the whole variations are small and it seems unlikely that any particular group will experience a substantially disproportionate number of wasted pregnancies. Not even among those who married aged 30 or over is there evidence of a large number of wasted pregnancies. Therefore it is probably not unrealistic to regard the number of children expected in the future as being achievable within a possible number of pregnancies for individuals. Over the population as a whole there will be a measurable amount of wasted pregnancies. This loss is independent of the problem of limited fecundity which might affect the ability to conceive, and hence the expected family size. This will be considered in Section 4.

2.6 SUMMARY

The main object of this investigation was to assess changes in family size over time. Since such measures are not available until the family has been completed—usually some ten to fifteen years after marriage—it is necessary to use related measures to investigate changes in trends. In this section, changes in ideal and expected family sizes are investigated, based on the opinions of the women concerned.

For families with "no particular worries about money or anything like that", a mean family size of 3·4 children is considered ideal, while for families "like yourselves" a mean of 2·5 children is said to be ideal. For women married between 1960 and 1964 the mean family size considered ideal was slightly lower, especially for families with "no particular worries about money . . ." than that for women married in the 1950s and for this specific measure the lower level was maintained for women marrying after 1964.

The mean number of children *expected* by married women under 45 years of age ranged from a minimum of 2·2 children to a maximum of 2·8 children with a most likely mean of 2·6 children. The mean minimum and the mean most likely numbers of children were also smaller for those married between 1960 and 1964 compared with the 1950 cohorts and in the case of the most likely estimate this lower level was maintained by those who married after 1964. For both the minimum and most likely estimates the decline is associated with a reduction in the number of women who expect to have four or more children.

The decline in mean most likely expected family size for the 1960–64 cohort is most apparent for couples who married when the wife was below 20 years of age, where the husbands are in manual occupations and where the husband, but not necessarily the wife, completed education at 15 years of age rather than older. There is also a suggestion that this decline is associated with non-Christian religious allegiances (including those who describe themselves as atheist or agnostic) and with couples of mixed non-Christian and Christian (of all denominations) allegiances. Among Catholic couples, those married between 1960 and 1964 expect a smaller family than those who married in the early 1950s but the difference between the late 1950s and the early 1960s is not statistically significant. The trend in mean most likely expected family size continued downward for those married after 1964 where the wife married under the age of 20 years. For the remaining sub-groups there was no evidence of a continued decline but a stabilisation of mean family size at the lower level.

Another decline which began before the early 1960 marriages was that in the expected family sizes of those who at the time of the investigation already had four or more children. Although those who had married more recently had had this number of children at shorter intervals than those who had married earlier, those who had married between 1955 and 1959 expected a mean family of 4·7 children compared with the earlier cohort who expected a mean of 5·0 children.

However, among women in the earlier cohorts who had completed their families, it was those who married early or had four or more children who were more likely to have had more children than they considered ideal. 73% of women with completed families of four or more children had more children than they considered ideal for families "like themselves". Whether this will apply to the later cohorts bearing in mind the availability of more effective contraceptive methods remains basically a matter of speculation but will be considered further in Section 4.

3 PATTERNS OF FAMILY BUILDING

3.1 INTRODUCTION

It was suggested in the first section of this report that fluctuations in the various fertility rates could be attributed not only to changes in family size but also to changes in the intervals between the births of children. A continuous decline in the intervals between children would have the effect, in any one year, of increasing the number of children born to a stable population of women. Only in the event of the minimum possible interval between births occurring in all cases would this "cause" of the fluctuations in the birth rate be eliminated. Conversely, of course, a lengthening of the intervals between the births of children would have the effect of reducing the birth rate, other circumstances remaining unchanged.

Therefore, the study of the changing pattern of family building between the 1950s and the 1960s became an intrinsic and essential part of the investigation into the fluctuations in the legitimate fertility rate. Is there any evidence to suggest that the fall in this rate during the middle 1960s could be attributed to any lengthening of the intervals between births or to an increase in the age at which people marry—which would have a similar effect on the fertility rate?

A cursory glance at the evidence immediately suggests that such developments have not taken place; all the measures indicate a continuous shortening of the child-bearing period and a steady decline in the ages at which women marry and the ages at which they expect to complete their families. Therefore as a factor in the decline of the legitimate birth rate in the middle 1960s longer intervals between births are a less likely though not an impossible explanation. Nevertheless, for its own sake, there is a value in broadening the question and asking what have been the changes in family building during the last twenty years and whether there have been variations in patterns between different groups in the population. The problem in providing a definitive description lies in the measures available to gauge variations in intervals between births and their applicability to date-of-marriage cohorts.

3.1(i) The measures used and the problems of measurement

Four main concepts have been used to measure, from cohort to cohort, the way in which groups of women build up their families. These are:

(a) The mean ages at which marriage took place
(b) The mean number of years between live births
(c) The mean number of children born within the first five and the first ten years of marriage
(d) The mean age (wife's) at which the family is expected to be completed.

The evaluation of some of these measures is not straightforward and qualifications attach to their interpretation. These qualifications derive, in part, from the application of the measures to a sample of married women which omits those who were over 44 years of age at the time of the investigation. Thus, calculations of the mean age at which women (and men) marry and the ages at which they expect to complete their families are deficient in that they omit the women who married later in the earlier cohorts and whose ages, for both measures, would be higher than the groups for whom the computations were made. This omission needs also to be taken into account when different sub-groups in the population are examined, except when the age-at-marriage groups are examined separately. Analyses by the husband's socio-economic group, for example, need to be assessed with the omissions in mind and inasmuch as some groups more than others are subject to later marriages, these groups are likely to be disproportionately affected by the omissions; the actual age at marriage for women married before 1950 is higher than the estimates calculated for the women included in this study and for those with husbands in managerial occupations the difference is likely to be greater than for those with husbands in manual occupations. Analyses other than by date-of-marriage cohort also suffer from incompleteness in that women who were unmarried at the time of the investigation but who marry subsequently—possibly at a higher age—are omitted. Thus, statements about the age of marriage for different social groups always have to be qualified in the light of the knowledge that further marriages in that group may take place later.

This suggests the other main qualification in the interpretation of data relating to the intervals between births to which all such studies are subject. For example, estimates of the lengths of the interval between marriage and first births can be computed only for those who have experienced a first birth. For the more recent cohorts, the estimates of the internatal length is based on the experiences of only a minority of the women who will eventually go on to have a child and this minority is by definition made up of those who had their first child relatively soon after marriage. Ultimately, then, the mean length of the interval between marriage and first births for the most recent marriage cohorts will be longer than the estimates produced in this report. In interpreting the data, therefore, the intervals need to be assessed in relation to the proportion of women who have experienced the event. If 90% of the women in the appropriate group had experienced a first birth (and it is unlikely that more than 98% ever will), the remaining 8%, say, are unlikely to affect the computed interval to any important extent. But if only 48% of the group—as for those married between 20 and 24 years of age after 1964—had had a first birth, the remaining, say, 50% who will later, may well affect the computed intervals. In certain cases, where it seems necessary for the sake of the discussion, some assessment of the possible effects of the "50%" has been made and included in the text.

The analysis has been confined to the intervals between *actual* live births. An exception was made for those women who were pregnant at the time of the investigation. Their expected date of confinement was taken as the date of their next live birth. The data would also have allowed the estimation of the interval between the last child (or marriage) and the next expected child, but the value of such data, affected as it is by unforeseeable events such as increasing infecundity, pregnancy wastage, contraceptive failure and so on, is doubtful. The estimate of the number of children a woman expects is also subject to these events, but over the whole of her child-bearing life, most women are likely to achieve the number of children expected, it is more questionable whether she has them when she wants to have them.

One measure, however, is based on expectations: that is the age at which the wife expects to complete her family. For those women who already have the number of children they expect, the validity of such a measure depends on their use of contraception. For those who expect more children its validity is related not only to contraception but also to the difference between expected family size and actual number of children living as well as to pregnancy wastage and infecundity. Nevertheless, such a measure provides, at the very least, an indication of when women would like to complete their families. Putting it another way, evidence from the pilot study suggested that beyond a certain age, well within the child-bearing range, women are reluctant or find themselves less able to have more children and this sets a limit to their child-bearing potential. The real validity of their estimates can only be gauged by a long-term follow-up investigation.

3.2 AGES AT WHICH MEN AND WOMEN MARRY

At the time of the investigation, the average ages of marriage for the men and women included in the sample were 24·5 and 21·5 years respectively. Analysis by date-of-marriage cohort (Table 3.1) suggests that, for women married since 1950, there has been a slight but continuous decrease in the age of marriage; for men the mean age fluctuates. But for all post-1950 cohorts, husbands tend, on average, to be about three years older than their wives.

TABLE 3.1

Mean age at marriage (wife and husband) (analysed by date of marriage)

Date of marriage	Mean age at marriage		
	Wife	Husband	Mean excess of husband's over wife's age
All dates	21·5	24·5	3·0
Before 1945	18·9	22·2	3·3
45–49	21·0	24·4	3·4
50–54	21·7†	24·7†	3·0
55–59	21·8	24·6	2·8
60–64	21·6	24·7	3·0
65 or later	21·5	24·4	2·9

N.B. Figures above the dotted line considerably underestimate the mean age at marriage for the relevant cohorts since women aged 45 years or over at the time of the investigation (and who had, therefore, married at a higher age) were omitted. Figures marked † are slight underestimates since they exclude the relatively few women who had married over the age of 28 years in 1950–54. See also Table 1.2.

3.2(i) Opinions about ages at which to marry

Women were asked their opinion about the ages at which they had married and also about the ages at which their husbands had married. 80% of married women thought that they had married at the right age, while 85% thought that their husbands had married at the right age. 15% of the women thought that they and 11% thought that their husbands had been too young at marriage.

In relation to specific ages of marriage, more women who married at 23 years thought this was the right age compared with any other single year whereas 25 or 26 years was the age which more women thought "right" for their husbands (Table 3.2.) For women, 20 years or younger was more likely (but by a minority) to be thought "too young", 25 years or older as being "too old". For men, according to their wives, 22 years or younger was said to be "too young" for marriage; 28 years or over, "too old".

TABLE 3.2(a)

Percentage of married women considering their age of marriage right/too young/too old (analysed by wife's age of marriage)

Opinion	Wife's age of marriage									
	All ages	Under 20	20	21	22	23	24	25	26 or over	Mean age
	%	%	%	%	%	%	%	%	%	
Right age	80	67	82	87	91	92	91	85	72	21·6
Too young	15	33	17	11	6	4	1	—	*	19·1
Too old	5	*	1	2	3	4	8	15	28	26·7
Base	6306	1782	963	985	714	544	394	266	651	

TABLE 3.2(b)

Percentage of married women considering their husband's age of marriage right/too young/too old (analysed by husband's age of marriage)

Opinion	Husband's age of marriage										
	All ages	Under 20	20 –22	23	24	25	26	27	28 –31	32 or over†	Mean age
	%	%	%	%	%	%	%	%	%	%	
Right age	85	65	81	88	91	95	95	91	88	71	24·5
Too young	11	34	18	11	8	3	3	3	1	1	21·4
Too old	4	*	1	*	1	2	3	6	12	26	31·7
Base	6306	49	1953	761	680	546	433	383	683	450	

† excludes 2% who did not know whether the age was right, too young or too old.

Reasons given for these opinions were very vague: immaturity or inexperience was most frequently cited as the reason for considering their or their husband's age at marriage as "too young". The other main explanation for thinking an age "too young" was financial insecurity—mentioned by 21% of women who thought that their husbands had married too young. Some examples of the comments that were made by those who thought that they or their husbands had married too young were:

Women who thought that they had married too young

No. 216 24 021 29 years of age married 1956 2 children.	More out of life. Could have helped my mother more for a start. Perhaps had a better start. Perhaps could have planned our family better.
No. 405 33 070 26 years of age married 1959 2 children.	Well I've missed out on a lot of things. My friends are all going out enjoying themselves and I'm at home doing the housework. New clothes and things like that. I see my friends all dressed up and I can't afford it. It's not so bad now as it was at first and it will be all right when I can get a job.
No. 405 23 041 36 years of age married 1951 1 child.	It didn't seem so at the time but now I think the ideal age for getting married is 23 but as my husband is 9 years older than me, it was better that we got married then.

Women who thought that their husbands had married too young

No. 506 02 089 20 years of age married 1964 1 child.	You jump in too quickly. You can't get a house or buy anything on H.P. You have to go home to your parents.

(Husband married at 20 years)

No. 405 33 026 24 years of age married 1960 2 children.	Can't earn enough at 19 to support a family.

(Husband married at 19 years)

Those who thought that they had married "too old" mentioned most frequently a preference for being younger with their children as a reason for holding this view.

3.3 LENGTHS OF INTERNATAL INTERVALS

The date at which each pregnancy had ended together with its outcome whether in a live or non-live birth was recorded and the interval between each outcome was calculated to the nearest month and then expressed in units of a year. Two measures were constructed:

(a) the number of years (and proportion of a year) between successive pregnancies, regardless of their outcome, up to and including the fourth pregnancy, and

(b) the number of years (and proportion of a year) between successive live births, up to and including the fourth live birth.

Neither measure includes the effect on the intervals between living children of the death of a child after the confinement. Both measures include an estimate for the appropriate interval where women were pregnant at the time of the interview and gave a date for the expected confinement. In all cases it was assumed that this would result in a live birth. Obviously this was an unrealistic assumption but no other could more reasonably be made without arbitrarily assigning still-births to a proportion of individuals. This does mean that estimates are produced for, say, the interval between marriage and first live birth for women who apparently have no children. A minority of these women may have experienced the death of a child after confinement; the remainder are women pregnant for the first time when they were interviewed and the intervals assigned to them are expected rather than actual intervals.

In the event, differences between the two measures were small. Hence the analysis was confined to intervals between live births.

3.3(i) Lengths of intervals between live births

The lengths of the intervals between live births measure the spacing between the births of living children incorporating any fluctuations which may have arisen from wasted pregnancies—hence it does not necessarily indicate the lengths of intervals that women desire or expect between their children. What then have been the changes in the lengths of the internatal intervals over the past twenty years?

Two main conclusions can be drawn from Table 3.3: first that there has been a decline in the lengths of most intervals from the earlier to the later cohorts, and it is a particularly consistent decline for intervals other than the first, and secondly that the proportion of women producing live-born children up to and including eight months of marriage has been noticeably increasing.

The length of the interval between marriage and the first live birth does exhibit fluctuations from the longest mean interval of 2·7 years experienced by those married before 1945 and by those married between 1950 and 1954 to 2·4 years for the remaining women married before 1960 to 1·8 years for those married between 1960 and 1964, admittedly calculated for a group of women not all of whom had experienced a first birth by the time of the investigation. Two types of adjustment need to be made to interpret the data more realistically: the first is to make some assessment for the 1960–64 cohort, to incorporate the effects of the longer interval likely to be experienced by those who will have a live birth later. The second is to consider the data for the separate age-at-marriage groups to account for the effects of omitting women who were over 44 years of age at the time of the investigation.

Figures above the lines in the body of the table enable comparisons to be made from cohort to cohort based on almost all the women likely to experience the appropriate live birth. About 92% of married women will produce a living child. Therefore comparisons of intervals based on the experience of this proportion of women in each cohort are unlikely to be substantially affected by the possibility of first pregnancies occurring to the remainder. For the cohorts still likely to be subject to further "first births", some estimate of the effects on the computed length of interval between marriage and first birth can be made. For example, the decline in the interval between marriage and the first live birth for all married women dates, if at all, from marriages taking place in 1950. To what extent does the 1960–64 cohort suggest a continuation of the decline? 84% of women married between 1960 and 1964 had had a live birth at a mean length of time after marriage of 1·8 years. A further 8%, approximately, can still expect a live birth. However, for the mean interval for this cohort to reach the mean interval (2·4 years) for the previous cohort, these 8% would have to wait, on average, between eight and nine years for their first live birth. Data from previous cohorts suggest that at most 5% wait this length of time. Anything less than 8% waiting on average 8 to 9 years would, of course, result in a mean interval for the 1960–64 cohort lower than 2·4 years and a continuing decline in the length of this interval.

TABLE 3.3

Lengths of intervals between live births
(analysed by wife's age at marriage and date of marriage)

Date of marriage	Number of married women	Mean number of years between live births				Percentage of women having live births				Percentage of women whose 1st live birth was up to and including 8 months after marriage
		Marriage to 1st	1st to 2nd	2nd to 3rd	3rd to 4th	1	2	3	4	
						%	%	%	%	
(a) *All ages*										
All dates	6306	2·2	3·0	3·3	3·1	86	60	27	11	14
Before 1945	193	2·7	3·9	5·2	4·2	98	81	48	25	15
45–49	968	2·4	3·7	4·1	4·0	92	73	38	21	13
50–54	1370	2·7	3·2	3·6	3·0	91	74	40	19	10
55–59	1501	2·4	2·7	2·8	2·3	91	73	33	12	12
60–64	1564	1·8	2·1	1·8	(1·6)	84	50	13	2	17
65 or later	706	0·8	1·3	—	—	54	3	—	—	19
(b) *Those married under 20 years of age*										
All dates	1782	1·7	2·9	3·3	3·2	92	67	35	17	28
Before 1945	132	2·6	4·1	5·1	(4·9)	97	80	45	23	17
45–49	227	2·0	3·3	4·2	3·9	97	83	54	34	25
50–54	321	2·0	3·3	3·4	3·1	97	84	53	33	23
55–59	384	1·9	2·6	2·7	2·3	97	81	46	21	27
60–64	501	1·5	2·0	1·8	(1·7)	92	60	18	3	31
65 or later	217	0·5	(1·4)	—	—	70	6	—	—	38
(c) *Those married 20–24 years of age*										
All dates	3600	2·4	3·1	3·4	3·2	85	60	26	10	9
Before 1945	61	2·8	3·5	(5·4)	(3·1)	98	84	52	30	10
45–49	696	2·4	3·8	4·1	4·1	91	69	33	17	9
50–54	826	2·8	3·2	3·7	3·0	91	74	38	20	7
55–59	839	2·6	2·9	2·8	2·4	91	74	31	11	8
60–64	799	1·9	2·1	1·9	(1·3)	83	48	13	1	12
65 or later	379	1·0	(1·3)	—	—	48	2	—	—	11
(d) *Those married at 25 years or over*										
All dates	917	2·4	2·8	2·9	(2·4)	76	48	17	5	6
Before 1945	—	—	—	—	—	—	—	—	—	—
45–49	45	(3·5)	(4·1)	(3·3)	(2·8)	89	80	42	11	2
50–54	222	2·9	3·2	3·6	(2·5)	85	60	25	8	5
55–59	277	2·5	2·6	2·6	(2·2)	84	61	21	8	3
60–64	264	1·9	2·2	(1·9)	(1·7)	73	38	8	2	8
65 or later	109	(0·9)	(1·1)	—	—	44	3	—	—	9

N.B. Figures above the lines in the body of the table enable comparisons to be made from cohort to cohort based on almost all the women likely to experience the appropriate live birth.

Interpretation of movements in the second interval—between first and second live births—is more uncertain. For the computed mean of 2·1 years for this interval based on those in the 1960–64 cohort who had had a second live birth to rise to 2·7 years, the remaining, say, 25% likely to experience a second live birth would need to wait on average almost four years after their first live birth. This is possible since 24% of the 1950–54 cohort experienced an interval of more than four years between the first and second live births.

Again, for third interval for the 1955–59 cohort of mean length 2·8 years to rise to 3·6 years, the remaining 7% who are likely to experience a third live birth would need to wait, on average, approximately seven years after the birth of the second child. While for the last measured interval, between the third and fourth live birth, to halt the decline in spacing, the remaining, say, 8% would need to wait, on average, four years—a not unreasonable length of time for this parity.

Generalising very tentatively, it would appear that the length of time between marriage and first live births is continuing to decline at least for the cohort following the one for which we have "complete" data, while the remaining internatal intervals could either decline or increase in length. There is a suggestion that the *rate* of decrease in the interval between first and second births will not necessarily continue at the previous level.

To nullify the effects of omitting from the sample women in the earlier cohort who married late, the data in Table 3.3 have also been analysed by age at marriage. Changes from cohort to cohort are comprehensive for those married before the age of 25 years; section (d) for those married at 25 years or older has been included for completeness, although the earlier cohorts omit women who married at the higher ages.

The decline in the length of the first interval is most consistent for those who married below 20 years of age and is likely to continue into the 1960–64 cohort. Similarly, despite fluctuations in the earlier cohorts—no doubt related to the effects of the war and the immediate post-war build up of births—the decline in the first interval for those married between 20 and 24 years of age will probably continue into the early 1960 cohort. In the same way as the total sample, it is possible that the length of the interval between the first and second live birth will *not* continue to decline.

Finally, it is obvious that in many instances, the decline in the interval between marriage and first live births can be attributed to an increasing proportion, since marriages in the early 1950s, of married women—particularly among those marrying before 20 years—who experienced their first live birth up to and including eight months after marriage. In some cases this short period was the result of early confinement but unless there has been a significant rise in below-term babies, the rise from cohort to cohort suggests an increased incidence of pre-marital conceptions. The percentages in this table do, of course, underestimate the proportion of pre-marital conceptions since it relates only to the interval between marriage and the first live birth; the pregnancies of some of the women with pre-marital conceptions would be likely to have ended in a non-live birth. For example, 38% of all women marrying under the age of 20 years had a live-born child within eight months of marriage while altogether 44% had experienced a pregnancy which had finished within that period. Of all these women who had been pregnant, 56% had completed their pregnancies within 9 months of marriage.

To obtain a comparison over time which was independent of the effects of wasted pregnancies, the data were analysed only for those women all of whose pregnancies had terminated in a live birth (Table 3.4). Comparisons between the "Before 1950" cohort and the 1950–59 cohort are the most useful since the distribution of their parities is similar. The distribution by number of living children for those married after 1960 is likely to change—the 29% with only one living child at the time of the investigation is an amalgam of those who will go on to have more children and whose first internatal interval is likely to be short with those whose final family size will be one, not to mention the omission of those who have yet to produce a live-born child.

For those women not subject to wasted pregnancies, the length of time taken to have families of comparable parities for those married between 1950 and 1959 was shorter in most cases than for those married earlier. It took, on average, 7·3 years for those married before 1950 to achieve a two child family; the comparable proportion for those married later was 6·1 years—a reduction of 16%. But perhaps the most striking decline has been for those with a parity of four, from 13·6 years to 9·1 years—a decline of a third. The decline has probably been even greater in practice since women of this parity are more likely to be subject to unsuccessful pregnancies and it is not unreasonable to suppose that those in the earlier cohort were more affected by these wasted pregnancies than those married later.

TABLE 3.4

Those without wasted pregnancies
Lengths of intervals between live births
(analysed by date of marriage and number of living children)

Number of living children	Number of married women	Mean number of years between live births					Percentage of all married women in cohort with this number of living children
		Marriage –1st	1st –2nd	2nd –3rd	3rd –4th	marriage –4th	
							%
(a) *Those married before* 1950							
1	162	3·8	—	—	—	3·8	14
2	283	2·4	4·9	—	—	7·3	24
3	146	1·8	3·2	5·4	—	10·4	13
4	75	1·6	2·8	4·0	5·2	13·6	6
							(Base=1,161)
(b) *Those married at* 1950–1959							
1	384	4·0	—	—	—	4·0	13
2	806	2·6	3·5	—	—	6·1	28
3	408	1·7	2·6	3·8	—	8·1	14
4	183	1·2	2·3	2·6	3·0	9·1	6
							(Base=2,871)
(c) *Those married* 1960 *or later*							
1	649	1·8	—	—	—	1·8	29
2	496	1·3	2·2	—	—	3·5	22
3	129	1·0	1·6	1·9	—	4·5	6
4	18	(0·9)	(1·6)	(1·5)	(1·7)	(5·7)	1
							(Base=2,270)

3.3(ii) Lengths of intervals between live births and expected family size

The length of the internatal intervals is related to the number of children women expect to have—the greater the number of children, the smaller all the intervals between previous births (Table 3.5). Of course, this relationship implies nothing about the sequence of events. We cannot say whether women expecting a larger number of children reduce the intervals between them so as not to extend greatly the total child-bearing period or whether, experiencing an early pregnancy, a woman realistically assesses the increased length of time she is "at risk" as being likely to result in more children.

TABLE 3.5

Lengths of intervals between live births
(analysed by date of marriage and most likely number of children expected)

Most likely number of children expected	Number of married women	Mean number of years between live births					Percentage of women having 1 2 3 4 live births			
		Marriage –1st	1st –2nd	2nd –3rd	3rd –4th	Marriage —actual number of children	1	2	3	4
							%	%	%	%
(a) *Those married before* 1950										
1	207	3·9	—	—	—	3·9	95			
2	363	2·6	4·8	—	—	7·4	99	93		
3	242	1·9	3·6	5·3	—	10·8	100	100	76	
4	123	1·6	2·9	4·4	5·1	14·0	100	100	100	79
(b) *Those married* 1950–59										
1	343	3·8	—	—	—	3·8	83			
2	929	3·1	3·6	—	—	6·7	96	75		
3	733	2·4	3·0	3·8	—	9·2	99	96	48	
4	419	1·5	2·4	3·3	2·9	10·1	100	99	91	45
(c) *Those married* 1960 *or later*										
1	169	2·1	—	—	—	1·2	59			
2	899	1·8	2·3	—	—	4·1	74	26		
3	852	1·4	2·1	1·9	—	5·4	82	46	9	
4	199	1·1	1·7	1·9	(1·6)	6·3	89	70	47	6

Again, fewer of the women married after 1959 had achieved their expected family size at the time of the investigation so that there is greater scope for fluctuations in the lengths of the internatal intervals—but the general conclusion holds even for this group. Those expecting four children and who had had their first by the time of the investigation had done so at a shorter interval after marriage than those expecting fewer children. The higher proportion without a first birth among those expecting fewer children can only result in an increase in the mean length of the first interval for those with lower expectations.

For differences over time, comparison between the earlier cohorts provides the better basis, although relatively fewer of the 1950–59 cohort had already achieved their expected family size and hence made their internatal intervals definitive, while the earliest cohort does exhibit the effects of the war and immediate post-war years.

There is little difference between the cohorts in the length of the first interval for those who expect only one child. The lower proportion in the later cohort actually experiencing this birth leads one to believe that the final length for the later cohort will be slightly longer than for the earlier cohort. This may be a reflection of the considerable reduction in childlessness between the two cohorts, at the partial expense of waiting longer for the first child. For those expecting more children, there is a suggestion that the intervals other than the first are likely to be shorter for the later cohort.

93% of women married before 1950 had had the two children they expect at an average time after marriage of 7·4 years; 76% of those expecting three children had taken 10·8 years to reach this number. The comparable lengths of time for women married 1950–1959—though based on proportionately fewer women completing their families—was 6·7 years and 9·2 years. To bring the 9·2 up to the 10·8 years experienced, on average, by the previous cohort, the remaining 30% of women still to have their third live birth would have to complete their families within a period of 13 years after marriage, on average—a not impossible state of affairs. Although by the date of the investigation, women married between 1950 and 1959 had taken, on average, a shorter period after marriage to produce four children compared with the earlier cohort, the number of women still expecting a third and fourth child may well result in a total child-bearing period for the 1950–59 cohort not much shorter, if at all, than that experienced by the earlier cohort.

3.3(iii) Opinions about lengths of internatal invervals

The intervals discussed in the previous section were the result of the combined effects of design, accidental pregnancies and wasted pregnancies. Supposing that women had control over their fertility and were not subject to unsuccessful pregnancies, what would be the kind of interval they would choose to have between their children? This question was put first to all women who wanted children about the interval between marriage and their first child and secondly to women who had had a second child without any intervening unsuccessful pregnancies.

TABLE 3.6

Those who wanted children
Length of interval desired at marriage between marriage and first live birth
(analysed by wife's age at marriage and date of marriage)

Length of interval between marriage and first live birth wanted	Age at marriage								
	Under 20			20–24			25 or over		
	Date of marriage								
	Before 1950	50–59	60 or later	Before 1950	50–59	60 or later	Before 1950	50–59	60 or later
	%	%	%	%	%	%	%	%	%
Within 1 year	31	32	35	23	19	21	12	20	31
After 1 year	12	15	15	16	14	18	20	19	22
After 2 years	25	25	24	32	35	34	24	32	26
After 3–4 years	11	12	11	14	17	14	22	13	10
After 5 years or later	5	4	4	5	6	4	5	2	2
D.K./No answer	12	7	3	10	8	5	17	13	7
Said to be pregnant at marriage	6	6	12	1	1	4	—	1	4
Base (Those who wanted children)	339	669	701	725	1,595	1,145	41	466	334

Reactions to length of the first interval varied according to the age at which the women married. For all cohorts, about a third of those marrying under 20 said they wanted a child within a year of marriage. A greater proportion of women married older preferred to delay the first birth (except, possibly, those marrying over 24 years, more recently). "After two years" was the length most frequently mentioned by those married above 20 years.

But apart from a reluctance to wait for five years or more, no specific length was considered ideal by the majority of women.

Just over half the women asked about the interval between the first and second live birth that they had experienced said that it was "about right" in length. But again no specific length of interval was thought more "right" than others—except around the two year mark. Of those dissatisfied with the interval they had had between their first two children, most mentioned that they would have preferred an interval round about two years, but the answers were very approximate.

Thus there is nothing in the evidence to suggest that the first intervals actually experienced by women were very much out of line with their preferences; the interval between first and second children may, in fact, be somewhat longer in practice than women say they would like.

3.4 NUMBER OF CHILDREN AND PROPORTION OF EXPECTED FAMILY ACHIEVED WITHIN FIVE AND TEN YEARS OF MARRIAGE

The relationship between changes in the pattern of family building and family size can only be investigated with a measure that combines the two concepts. This is done by estimating the number of children born at specific durations of the marriage—by itself, this could reflect changes in family size as well as changes in the intervals between children—and relating it to some measure of final family size. In this case, the number of children still living after five and ten years of marriage is related to (most likely) expected family size.

It is, again, a limited measure since it is confined to those who have already been married five (or ten) years and hence tells us nothing of more recent movements. For those married most recently, an estimate of the number of children expected within the five years after the date of interview has been included.

3.4(i) Number of living children born within the first (a) five years (b) ten years of marriage

Analysed by the wife's age at marriage, the mean number of children born within five years of marriage ranged from 1·5* for those married under 20 years to 1·1 for those married above 24 years. Similarly, the mean number after ten years of marriage was 2·3 for those married below 20 years and 1·7 for those married above 24 years of age.

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*The data are given to two decimal places in the table to reduce the approximation error for the percentages.

TABLE 3.7

Mean number of live-born and still-alive births which took place within the first (a) five years of marriage (b) ten years of marriage as a percentage of mean most likely expected family size

(analysed by wife's age at marriage and date of marriage)

Date of marriage	Number of married women†	Mean most likely expected number of children	Mean number born within first *five* years of marriage	Mean number born within first *ten* years of marriage	Percentage of most likely expected number of births occurring	
					(a) within first five years of marriage	(b) within first ten years of marriage
1. *Married below 20 years of age*					%	%
All dates	1,782	2·91	1·52	2·29	52	79
Before 1945	132	2·64	1·12	1·92	42	73
45–49	227	3·17	1·44	2·23	45	70
50–54	321	3·27	1·50	2·40	46	74
55–59	384	3·07	1·62	2·43	53	80
60–64	501	2·66	1·68	—	63	—
65 or later	217	2·52	—	—	—	—
2. *Married 20–24 years of age*						
All dates	3,600	2·53	1·22	1·90	48	75
Before 1945	61	2·97	1·21	2·07	41	70
45–49	696	2·34	1·17	1·78	50	76
50–54	826	2·58	1·16	1·95	45	76
55–59	839	2·62	1·25	1·97	48	75
60–64	799	2·51	1·23	—	49	—
65 or later	379	2·55	—	—	—	—
3. *Married at 25 years of age or older*						
All dates	917	2·12	1·11	1·69	52	80
Before 1945	—	—	—	—	—	—
45–49	45	2·47	0·89	1·84	36	74
50–54	222	1·99	1·02	1·63	51	82
55–59	277	2·20	1·21	1·65	55	75
60–64	264	2·09	1·10	—	53	—
65 or later	109	2·10	—	—	—	—

†For those married 1960–64 the estimates of the number of children born within five years of marriage are based only on those married five years. Similarly, calculations for the number born within ten years exclude those in the 1955–59 cohort not married for ten years.

Among women married under 20 years of age, the mean number of children born to them within five and ten years of marriage increased from the earlier to the later cohorts: for this group there was both an increase in the number of children born and an increasing concentration of child bearing, measured in terms of the proportion of the expected final family occurring within these periods after marriage. This suggests a decline in the length of the total child-bearing period. Women married over the age of 24 years exhibit an increase in the mean number of children born within five and ten years of marriage similar to the previous group until the 1960–64 marriage cohort. Those of that cohort who had been married for a period of five years or more at the time of the investigation had had, on average, fewer children (1·10) within that period than had the previous cohort. This is related also to a decline in the proportion of the (expected) total family born within that period, suggesting an increase in the length of the child-bearing period. An increase in the length of this period relative to the previous cohort is also suggested for women married between 1955 and 1959 at 25 years of age or over. For them, on average, 75% of their expected family size had been born within ten years of marriage, compared with 80% of the previous cohort. In part this may be a consequence of expecting a larger family. Since, however the proportion of their families born within *five* years was no lower than the previous cohort, it suggests very tentatively either that the influences operating between 1960 and 1964 were conducive to a lengthening of the intervals between children or that the declining fecundity of these women as time passed meant that it would take them longer to achieve their expectations of a larger family. Unfortunately the movements in the data relating to those who married between the ages of 20 and 24 years—numerically the most important group—are even less clear than for the other age-at-marriage groups. In fact the data contain elements from both the other groups: an increase in the later cohorts of the mean number of children born within ten years of marriage (but not a consistent rise in the number born within five years) while not necessarily resulting in a decline in the total child-bearing period.

Data for women married in 1965 or later can only be speculative and can suggest future trends only in very general terms. This is considered next.

3.4(ii) Number of children expected in the "next" five years

Women were asked when they expected to have their next child and also the number of children they expected to have before the summer of 1972 i.e. approximately five years from the date of interview. For women married in 1965 or later, this estimate, together with the number of living children they already had, provided an indication of the number of children they expected within five years of their marriage. It probably provides nothing other than a measure of what women would like to happen.

TABLE 3.8

Women married in 1965 or later

Mean number of children expected in the 'next' five years as a percentage of the mean most likely expected number of children

(analysed by wife's age at marriage)

Age at marriage	Mean number of living children	Mean number of children expected in the 'next' five years	Mean (mostly likely) expected number of children	Mean number living and number expected in 'next' five years	
				number	% of expected number
					%
Under 20	0·59	1·36	2·52	1·95	77
20–24	0·34	1·53	2·55	1·87	73
25 or over	0·34	1·34	2·10	1·68	80

The results are unrealistic. It is unlikely that women, particularly those who married at 25 years of age or over, expecting between two and three children will manage, on average, to have 70%–80% of those children within five years of marriage. These figures do suggest—albeit very tentatively because of the uncertain nature of the data—that women increasingly would like to concentrate their child bearing into the early years of marriage.

3.5 AGE (WIFE'S) BY WHICH FAMILY IS EXPECTED TO BE COMPLETED

The final measure indicating how families are built up is an estimate of the age by which the wife expects to complete or has completed her family. For those who said that they expected no further children, this age was taken as the one at which their last live-born child was produced. Those expecting more children were asked how old they thought they would be when their last child was born. Again, comparisons between cohorts have to be made separately for the different age-at-marriage groups because of the exclusion of women marrying late in the earlier cohorts.

TABLE 3.9

Mean age (wife's) by which family is said to be completed (analysed by wife's age at marriage and date of marriage) (mean number of years)

Date of marriage	Wife's age at marriage				
	All ages	Under 20	20-24	25–29	30 and over
All dates	29·4	26·6	29·7	33·4	37·2
Before 1945	29·5	28·6	31·2	—	—
45–49	30·3	29·3	30·3	(34·5)	—
50–54	30·7	28·3	30·8	33·7	(35·2)
55–59	30·0	26·8	30·1	33·8	(37·9)
60–64	28·0	24·6	28·5	32·8	37·1
65 or later	27·6	24·5	28·1	32·1	(37·0)

Since the 1950–54 cohort, there has been a noticeable decline in the age at which women expect to complete their families, from 30·7 years to 27·6 years, with the greatest fall occurring among those marrying early. In part, this is related to the decline in family size which the most recent cohort of young marrieds expect. But even within each size of family expected, women married after 1959 expect to complete their families earlier than did the previous cohort. In part it is also a consequence of earlier marriages.

TABLE 3.10

Mean age (wife's) by which family is said to be completed (analysed by date of marriage and most likely expected number of children)

Date of marriage	Most likely expected number of children			
	1	2	3	4 or more
Before 1950	25·3†	28·6†	31·9†	35·3†
50–59	27·7	29·8	31·4	32·1
60 or later	26·7	27·1	28·5	29·5

†See note in Table 3.1

3.6 SOME VARIATIONS IN THE PATTERNS OF FAMILY BUILDING

The previous sections suggest that there are differences over time in the way in which families are formed—variations in the lengths of the intervals between children and in the proportions of families completed at different durations of marriage and. hence, in the ages at which women expect to complete their families. These changes could be the result of changing cultural patterns, the adoption by an increasing proportion of women of the habits of groups who traditionally start their families early or they could be the result of a general change affecting all groups. In fact, the changes appear to have affected all groups of women but in varying degrees.

In this section, two features are investigated: the extent to which there are differences between cultural groups and the nature of the changes affecting the groups. For the former purpose, the differences between the sub-groups who married between 1950 and 1959 are probably the most reliable guide, since this cohort is least affected by measurement problems. Changes over time are subject to all the qualifications discussed in 3.1. For some measures (e.g. age at marriage) comparisons between 1950–59 and 1960 or later are less circumscribed, for others, such as differences in internatal periods, comparisons between the "Before 1950" and 1950–59 cohorts are preferable because the "1960 or later" cohort is most likely to be affected by future births.

Three cultural variables have been used to investigate differences: age at which full-time education was completed, husband's socio-economic group and religion. The differences that are related to contraceptive use are also studied to illuminate the nature of the changes in how families are built up.

TABLE 3.11

Mean age at marriage (wife's)
(analysed by date of marriage and cultural variables)

Groups		Date of marriage		
		Before 1950	1950–1959	1960 or later
Age completed full-time education				
Husband below 15 years	Wife 15 or below	20·3	21·0	24·7
	Wife 16 or above	21·8	22·1	(25·0)
Husband 15 years	Wife 15 or below	20·7	20·4	20·4
	Wife 16 or above	(21·9)	22·1	21·5
Husband 16 years or above	Wife 15 or below	21·0	21·6	21·4
	Wife 16 or above	22·1	23·3	22·8
Husband's socio-economic group				
Managerial		21·4	22·6	22·9
Non-manual		21·0	22·2	22·2
Skilled manual		20·5	21·4	21·1
Other manual		20·1	21·3	21·1
Religion				
Husband & Wife Christian, not Catholic		20·7	21·7	21·5
Wife Catholic; husband other Christian		20·8	22·1	21·7
Husband Catholic; wife other Christian		20·2	21·4	21·4
Husband & Wife Catholic		20·7	22·6	23·4
Husband & Wife non-Christian		20·4	21·0	20·9
Other combinations		20·9	21·5	22·0

3.6(i) Cultural differences

Ignoring those who completed their education *before* the age of 15 years—a group which tends to be older and is, in any case, reducing in size as time passes—the longer the period of full-time education, particularly of the wife, the later the marriage. Women with husbands currently in non-manual or managerial occupations married later, on average, and so did women where both partners are Catholic.

However, the differences are at the most only a matter of some three years.

The biggest decline in the age at which women married between the 1950–59 and 1960 or later cohorts occurred among women with the longest period of full-time education, but this was not reflected in any similar decline among the non-manual groups, but perhaps rather among those with husbands in skilled manual occupations. Where the couple were both Catholics the wife's mean age at marriage was higher for the more recent cohort. Hence, changes over time in the age at which women marry were not uniform over all groups in the population. The very small decline exhibited by the total population since marriages in 1950 is the product of counter-balancing forces.

Differences in the length of intervals between children among sub-groups in the population were very small. (Table 3.12). But inasmuch as any pattern exists in relation to length of education, it seems that the longer the period of full-time education, particularly the wife's, the shorter the length of the interval between first and second live births but this is not apparent, yet, for the post-1959 cohort*. Differences in patterns according to the husband's socio-economic group were even less clear—apart from the length of the first interval which was shorter for manual (particularly non-skilled) groups and longer for non-manual groups. (Table 3.13). However, differences according to religion were much more distinct (Table 3.14). If we consider the couples married between 1950 and 1959, all internatal intervals were shorter for Catholic couples or for couples where the husband was a Catholic. However, where the wife was a Catholic and the husband not, the intervals were longer than for all other groups. This may be related to the marginally more frequent use of the contraceptive pill by Catholic wives married to non-Catholic husbands. (Table 4.18).

Analysis of the data on the number of children born by specific durations of the marriage adds nothing to the interpretation. The differences between sub-groups are small and such patterns as exist reinforce the conclusions derived from the other measures.

The ages at which women expect to complete their families relate directly to length of education (apart from those who finished full-time education before they were 15 years): the higher the age at which full-time education finished, the higher the age at which the family is expected to be completed. Women with husbands in non-manual occupations expect to complete their families later. Non-Christian couples, particularly in the later cohorts, expect to complete their families younger; Catholic couples at a later age.

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*This ignores the special group who completed their full-time education before the age of 15 years.

TABLE 3.12

Lengths of intervals between live births (analysed by date of marriage and age completed full-time education)

Age completed full-time education		Number of married women	Mean number of years between live births				Percentage of women having			
			Marriage –1st	1st –2nd	2nd –3rd	3rd –4th	1	2	3	4
							live births			
(a) *Those married before* 1950							%	%	%	%
Husband under 15 years	Wife under 15	720	2·3	3·7	4·4	4·0	94	75	43	25
	Wife 15	58	2·0	(4·4)	(4·8)	(3·6)	91	74	40	22
	Wife 16 or above	50	(2·3)	(4·3)	(4·1)	(5·0)	92	80	30	12
Husband 15 years	Wife 15 or below	88	2·7	3·7	(4·3)	(4·8)	91	73	30	15
	Wife 16 or above	24	(2·7)	(3·2)	(4·4)	(4·2)	88	71	17	4
Husband 16 years or above	Wife 15 or below	112	2·9	3·8	(3·9)	(3·3)	81	66	28	14
	Wife 16 or above	86	2·8	3·6	(3·9)	4·2	95	73	44	19
(b) *Those married* 1950–1959										
Husband under 15 years	Wife under 15	768	2·6	3·2	3·6	3·0	91	69	38	19
	Wife 15	310	2·5	2·9	3·1	3·0	90	73	37	18
	Wife 16 or above	129	2·5	3·3	(3·4)	(2·7)	88	71	37	15
Husband 15 years	Wife 15 or below	733	2·3	3·0	2·9	2·5	95	77	37	17
	Wive 16 or above	159	2·9	2·8	(2·8)	(2·3)	88	75	30	9
Husband 16 years or above	Wife 15 or below	265	2·7	3·0	3·0	2·7	90	76	38	14
	Wife 16 or above	412	2·8	2·7	3·1	2·3	89	75	30	10
(c) *Those married* 1960 *or loter*										
Husband under 15 years	Wife under 15	54	1·6	(2·0)	(1·8)	(1·6)	61	26	13	6
	Wife 15	76	1·4	(1·8)	(1·6)	(2·3)	84	37	14	3
	Wife 16 or above	38	(2·5)	(2·6)	(1·2)	—	61	21	8	—
Husband 15 years	Wife 15 or below	1,024	1·5	2·1	1·9	1·5	79	39	10	2
	Wife 16 or above	240	1·6	2·1	(1·9)	(1·4)	75	30	7	1
Husband 16 years or above	Wife 15 or below	268	1·6	2·0	(1·5)	(1·3)	70	32	7	1
	Wife 16 or above	474	1·6	2·1	(2·2)	(1·3)	69	36	7	*

TABLE 3.13

Lengths of intervals between live births
(analysed by date of marriage and husband's socio-economic group)

Husband's socio-economic group	Number of married women	Mean number of years between live births				Percentage of women having 1 live births	2	3	4
		Marriage –1st	1st –2nd	2nd –3rd	3rd –4th	%	%	%	%
(a) *Those married before* 1950									
Managerial	219	3·0	4·0	4·3	(4·0)	92	72	27	11
Non-manual	224	2·6	3·4	4·1	(4·2)	89	70	36	18
Skilled manual	460	2·3	3·9	4·8	4·1	92	74	43	23
Other manual	252	2·0	3·7	3·7	3·8	97	81	50	32
(b) *Those married* 1950–59									
Managerial	549	2·7	2·8	3·2	2·6	90	76	31	11
Non-manual	542	2·9	2·9	3·5	(3·0)	88	70	32	9
Skilled manual	1,165	2·5	3·1	3·1	2·7	93	74	37	17
Other manual	600	2·1	2·9	3·2	2·7	93	76	43	22
(c) *Those married* 1960 *or later*									
Managerial	343	1·7	2·1	(1·9)	(1·2)	74	38	8	1
Non-manual	483	1·7	2·0	(1·9)	(2·2)	70	30	8	*
Skilled manual	919	1·6	2·1	1·9	(1·5)	76	34	9	1
Other manual	502	1·4	2·0	1·7	(1·6)	80	42	11	2

TABLE 3.14

Lengths of intervals between live births (analysed by date of marriage and religion)

Religion	Number of married women	Mean number of years between live births				Percentage of women having			
		Marriage –1st	1st –2nd	2nd –3rd	3rd –4th	1	2	3	4
						live births			
(a) *Those married before* 1950						%	%	%	%
Husband and wife Christian but not Catholic	898	2·5	3·7	4·5	3·9	92	73	38	20
Wife Catholic: Husband Other Christian	56	2·1	3·9	(3·7)	(4·8)	89	77	43	25
Husband Catholic: Wife Other Christian	37	(2·2)	(4·5)	(3·6)	(4·6)	95	84	49	30
Husband and wife Catholic	71	1·8	3·4	(4·0)	(4·2)	96	83	54	31
Husband and wife non-Christian	49	(2·1)	(3·8)	(3·8)	(3·4)	94	67	39	24
Other combinations	54	(2·8)	(3·9)	(4·2)	(4·9)	91	69	43	26
(b) *Those married* 1950–59									
Husband and wife Christian but not Catholic	2,150	2·6	3·0	3·3	2·8	91	73	34	13
Wife Catholic: Husband Other Christian	110	3·0	3·1	(3·3)	(2·7)	91	65	35	16
Husband Catholic: Wife Other Christian	125	2·1	2·6	2·7	(2·8)	94	78	44	23
Husband and wife Catholic	227	1·9	2·7	2·9	2·6	93	80	52	30
Husband and wife non-Christian	142	2·4	3·2	3·0	(2·6)	92	75	35	15
Other combinations	117	2·2	3·0	3·3	(2·3)	95	82	45	18
(c) *Those married* 1960 *or later*									
Husband and wife Christian but not Catholic	1,553	1·6	2·1	1·9	(1·5)	74	35	8	1
Wife Catholic: Husband Other Christian	114	1·5	(2·0)	(1·6)	(1·8)	83	41	15	3
Husband Catholic: Wife Other Christian	118	1·3	(1·9)	(1·6)	(1·9)	78	38	10	3
Husband and wife Catholic	170	1·6	1·8	(1·6)	(1·5)	79	40	12	2
Husband and wife non-Christian	175	1·5	2·3	(1·8)	(1·3)	73	34	6	1
Other combinations	140	1·2	(2·0)	(1·7)	(1·6)	67	43	9	1

TABLE 3.15

Mean age (wife's) by which family is said to be completed (analysed by date of marriage and cultural variables)

Groups		Date of marriage		
		Before 1950	1950–59	1960 or later
Age completed full-time education				
Husband below 15 years	Wife below 15	30·1	31·4	32·9
	Wife 15	29·6	29·5	27·9
	Wife 16 or above	30·6	30·9	31·2
Husband 15 years	Wife 15 or below	29·8	29·0	26·6
	Wife 16 or above	(28·1)	30·0	28·1
Husband 16 years or above	Wife 15 or below	30·4	29·9	27·8
	Wife 16 or above	31·4	31·5	29·3
Husband's socio-economic group				
Managerial		29·8	30·7	29·5
Non-manual		29·6	30·8	28·4
Skilled manual		30·4	30·2	27·4
Other manual		30·3	29·9	26·9
Religion				
Husband and Wife Christian, not Catholic		29·9	30·2	27·7
Wife Catholic; husband other Christian		31·9	31·3	27·5
Husband Catholic, wife other Christian		31·0	30·0	27·9
Husband and Wife Catholic		30·8	31·8	29·9
Husband and Wife non-Christian		30·0	29·4	26·9
Other combinations		30·3	31·1	28·4

Compared with the previous cohort, all groups of women married after 1959 expect to complete their families earlier. It is those with the shortest period of full-time education, with husbands in manual occupations and where the wife, but not the husband is Catholic who expect to reduce most the age at which they complete their families.

3.6 (ii) Differences in contraceptive use

The decline in the length of the interval between marriage and the first live birth is not solely attributable to the increase in pre-marital conceptions. Those women married between 1950 and 1959 who said that all their pregnancies were planned experienced, on average, a shorter interval than a similar group of women married earlier. In the same way, those planning all their pregnancies in the later cohort had reduced the lengths of *all* internatal intervals compared with the earlier cohort. So that the reduction in the effective child-bearing period is in part a conscious movement.

However, in all cohorts, those who had planned all their pregnancies experienced longer first intervals than the other groups. About 1·8 years was the length of the first interval when contraception was not practised compared with 4·3 years and 3·9 years for the "Before 1950" and 1950–59 cohorts respectively using family planning consistently.

These differences are too great to be attributable to errors of memory. However, some of the intervals said to be experienced by women in the "Before 1950" cohort would seem to be too long compared with the later cohort to justify the description of their past use of family planning. For example, a mean interval of 4 or 5 years said to be experienced between the second and third and between the third and fourth live births by those whose pregnancies were all unplanned is much longer than for the similar group in the later cohort. It is possible that the earlier cohort was subject to a much higher rate of pregnancy wastage or they may have used some form of family limitation not discussed in the interview. The other possibility is that memories may be at fault. Discussion of the changes over time in relation to contraceptive practice, apart from the most obvious, may, therefore, be slightly suspect.

TABLE 3.16

Those who have been pregnant
Lengths of intervals between live births
(analysed by date of marriage and past use of family planning)

Past use of family planning	Number of married women	Mean number of years between live births				Percentage of women having 1 2 3 4 live births			
		Marriage –1st	1st –2nd	2nd –3rd	3rd –4th	1	2	3	4
						%	%	%	%
(a) *Those married before* 1950									
All pregnancies occurred before planning	159	1·9	3·2	3·2	4·0	100	60	32	18
All before or planned	75	1·6	4·4	(5·2)	(3·8)	100	97	36	13
All unplanned	208	1·8	3·7	4·9	4·2	100	90	59	32
Planned and unplanned	165	2·1	3·7	4·6	4·3	100	97	64	32
All planned	182	4·3	4·2	(4·3)	(3·2)	100	63	13	4
(b) *Those married* 1950–59									
All pregnancies occurred before planning	324	2·1	2·6	2·6	2·5	100	68	35	16
All before or planned	204	1·6	3·2	3·8	(3·0)	100	96	34	10
All unplanned	515	1·7	2·8	3·2	2·8	100	87	56	28
Planned and unplanned	431	2·1	3·0	3·4	2·8	100	96	63	24
All planned	641	3·9	3·1	3·8	(2·7)	100	72	13	3
(c) *Those married* 1960 *or later*									
All pregnancies occurred before planning	300	1·1	1·8	(1·4)	(1·4)	100	33	12	3
All before or planned	145	1·1	2·4	(2·2)	(2·3)	100	79	9	1
All unplanned	347	1·0	1·9	1·9	(1·7)	100	54	16	2
Planned and unplanned	182	1·5	2·1	1·8	(2·7)	100	85	27	1
All planned	444	2·6	2·3	(2·1)	—	100	28	3	—

TABLE 3.17

Mean age (wife's) by which family is said to be completed
(analysed by date of marriage and past use of family planning)

Date of marriage	All pregnancies occurred before use of family planning	Past use of family planning			
		All before or planned	All unplanned	Both planned and un-planned	All planned
Before 1950	27·3	30·1	31·2	32·6	29·4
50–59	28·7	30·3	30·1	30·9	30·9
60 or later	26·1	27·2	26·9	27·3	28·5

For all cohorts, women whose pregnancies had all occurred before they used family planning expected to complete their families earliest. And this applied to those who married before 1950—most of whom have in fact completed their families—as well as those married later. For this group, contraception is a means of limiting the size of families rather than of spacing. Those who planned all their pregnancies in the earliest cohort expect to complete their families at a mean age of 29·4: these women tended to have two rather than three children and relatively lengthy intervals between them. Contraception enables these women to plan both in terms of numbers of children and spacing. For the remainder, those whose pregnancies are all unplanned are likely to have more children and hence the later cohorts are probably being unrealistic in their expected age of family completion unless they adopt some method of family limitation as they may well do. Those whose pregnancies were planned and unplanned—probably as a result of the use of less reliable methods of contraception—are likely to be older when their families are completed.

TABLE 3.18

Mean age (wife's) by which family is said to be completed (analysed by date of marriage and future use of family planning)

	Future use of family planning					
Date of marriage	Uses reliable method and will continue	Uses reliable method & will *not* continue	Uses less reliable & will continue with reliable	Uses less reliable & will continue with less reliable	Never used family planning but intends to	Never used family planning and doesn't know intentions
Before 1950	30·5	(30·3)	(32·0)	29·7	(30·8)	29·5
50–59	30·2	(32·4)	31·1	30·8	31·8	32·0
60 or later	27·9	(27·6)	27·2	28·3	28·1	29·6

Analysing the data by future use of contraception suggests that women are more realistic than the measure of past use indicates. Those who have never used contraception and have no particular intentions in that respect expect to complete their families at a higher age than other groups: those using the less reliable or reliable methods but intending to change to (or continue with) reliable methods expect to complete their families earliest. The remaining groups take up intermediate positions.

3.7 SUMMARY

Because of difficulties in constructing valid measures describing the changes in the way couples go about building up their families, conclusions are necessarily tentative. The most obvious generalisations are that the ages at which women, particularly, marry are declining and so too are the lengths of most internatal intervals. There has also been an increase in the number of children born within the first five years of marriage. The decline in the first interval is probably attributable to the considerable increase in premarital conceptions, but also to deliberate intention on the part of those who said that they had planned all their pregnancies. The effect of these movements has been a reduction in the age at which women expect to complete their families.

These movements manifest themselves among most cultural sub-groups in the population to an almost similar degree.

Comparisons over time have been confined to groups married before 1960. A study of data for this and later cohorts suggests that the trends are not necessarily irreversible, even for the 1950–59 cohort. A sufficient proportion of women in this and later cohorts have not yet completed their families and if they should delay a considerable length of time, the length of the child-bearing period may well revert to the earlier situation. Certainly there is evidence to suggest that intervals between children are more sensitive to external economic and social conditions than family size. A change in these conditions affecting those who have not yet completed their families may reduce the rate of decline in the effective child-bearing period. The data also suggest that the *rate* of decrease in the interval between first and second live births will not necessarily continue at the previous level.

However, using as a measure of the length of child-bearing the age at which women expect to complete their families, women in the later cohorts certainly *expect* to complete their families at a lower age than those married earlier and their intentions with respect to contraception add weight to this expectation.

4 THE LIMITATIONS ON FECUNDITY

4.1 INTRODUCTION

So far we have been concerned with women's ideals and expectations; the number of children they have and the number of children they hope to have. How realistic are these expectations in the light of factors, both involuntary and voluntary, which may limit a couple's propensity to have children?

Two broad categories of restriction on fecundity can be distinguished; that arising from physical disabilities in either the husband and wife—usually termed involuntary impairment—and secondly, that arising from the voluntary and intended restriction of fertility by the use of contraceptive methods of varying degrees of efficiency.

In this section, these limitations on fecundity are considered mainly in relation to the post-1959 cohort who expect slightly smaller families than women married in the 1950s. In particular, those sub-groups within this cohort who expect smaller families—those who married under 20 years of age or where the husband was in a manual occupation, for example—are investigated to see whether there is any evidence to suggest that these groups are more likely to suffer from some form of involuntary impairment of fecundity or, more likely, whether their use of voluntary methods of family limitation is such as to enhance the chances of their expectations being realised.

However, the findings for these sub-groups need to be set in the context of the general situation for women as a whole, so very briefly we discuss for all married women the incidence of physical disabilities that may affect child-bearing and, also, the use of methods of family planning. We then look at the extent to which women marrying after 1959 and expecting smaller families differ from those marrying earlier.

Involuntary impairment of fecundity

Since this is a large-scale study without the facilities of reliable medical diagnosis, information on involuntary disabilities that we have relies entirely on the informant's assessment of herself and her husband or on a medical opinion interpreted by the informant. The informants were asked whether they had any reason to think that they or their husbands had any physical difficulties which were likely to affect their ability to have children in the future. Details were asked of the nature of the disability, but in many cases the information obtained was not precise enough either to reinforce or cause us to disagree with the informant's summary opinion. In a minority of cases, particularly where the informant stated that it was impossible to have any more children and this was brought about by a surgical operation, the informant's assessment of her condition could be considered reliable. Questions were also asked about visits to the doctor concerning infecundity and the doctor's or the informant's assessment of the likelihood of the women having children in the future. It should be noted that these questions related to fecundity in the future; some women may well have had families of a size they consider desirable before such disabilities affected them. It is also most important to point out that many women, mainly those in the younger age groups, recently married and perhaps using some form of contraception may not be aware, yet, of any physical difficulties affecting their (or their husband's) ability to produce live-born children.

Further questions were also asked about *past* difficulties in conception and pregnancy. In compiling a summary on fecundity, those couples who stated that their last use of contraception was some time previously and whose pregnancies were fewer than might be expected were included as sub-fecund, although they themselves had not classified themselves in this way. In the analysis we were concerned both with the replies to the direct questions on future fecundity and with the comprehensive index of fecundity which incorporated these additional details on past fecundity.

Voluntary limitation of fecundity

The extent to which couples voluntarily limit or regulate their family size is also discussed in this section. Our concern is primarily with what couples are likely to do in the future—particularly those couples in the more recent cohorts who expect to have smaller families. To what extent are the methods of family planning they use different from and possibly more efficient than those who married earlier? As well as gauging the efficiency of the contraceptive methods used or likely to be used, some measures of the couples' past ability to plan their families are discussed together with changes in planning habits between the earlier and later marriage cohorts. In this way, the chances of a smaller family size for those marrying after 1959 materialising can be more realistically assessed.

4.2 THE EXTENT OF INVOLUNTARY IMPAIRMENT

Of married women aged 16–44 years, who were living with their husbands, 21 %, representing some 1·3 million married women, said that they had reason to believe that they would find it difficult or impossible to have children in the future. This is probably an underestimate for two reasons. The first is that the sample omits a disproportionate number of women aged 40–44 years—a group for whom the incidence of disability increases considerably. This omission affects the overall proportion by at most an additional 4 % if *all* the omitted women in this age group said that they had such a disability. More important—and unknown in size—is the group who are unaware of such difficulties. Of those married in 1965 or later only 7 % said that they thought it would be difficult or impossible to have children in the future. The parallel proportion for those married between 1960 and 1964 was 17 %. This suggests that of those most recently married an additional 10 % have or will have in a short time an impairment of fecundity of which, at the time of the investigation, they were unaware. This would probably increase the current incidence of involuntary impairment among all married women 16–44 years to about 22 %.

4.2(i) Types of impairment

Just under a third of these women (6 % of all) declared that future childbearing was "impossible" and in a majority of cases (two-thirds) this was borne out by the descriptions of the operations undergone—hysterectomies or other sterilising operations of the wife or husband. In the remaining cases, most informants had consulted doctors who were "very sure" or "fairly sure" that the informant was unlikely to have any more children. Difficulty in conception was given as the main reason.

Only 9% of those who said that child-bearing was impossible had not seen a doctor and in these cases the menopause, previous unsuccessful attempts at child-bearing, or the wife's current illness were given as the reasons for the impossibility of successful child-bearing in the future.

The degree of impairment suffered by those who described their future fecundity as "difficult" rather than "impossible" (just over two-thirds of those with any impairment) was much less reliably gauged. Some 15% of married women living with their husbands (equivalent to approximately 0·9 m. women) said that they or their husbands had some disability which would make it difficult for them to have children in the future. Some examples of the descriptions of the disabilities are given below.

Classified as "Probably sterile or unlikely to have children because of related physical difficulties"

No. 506 02 052 36 years old Married in 1957 2 sons	Health reasons. I had two very difficult pregnancies. I had thyroid trouble—and nearly died both times.
No. 606 41 021 42 years old Married in 1946 3 daughters and 3 sons, one of whom has died	It would be dangerous to my health as my heart is bad. Doctor's opinion: He didn't say but after I'd had the first I was told not to have any more and the same after all of them but what can you do if you're married.
No. 913 43 002 20 years old Married in 1964 1 daughter	Because I have great difficulty in carrying and am very anaemic.
No. 913 53 019 29 years old Married in 1958 1 son and 1 daughter	The doctor advised me not to have any more because I was very ill after I had Roy. I have had haemorrhages.

Classified as "Sub-fecund"

No. 917 74 032 41 years old Married in 1950 2 adopted children	Because of my health. I've got diabetes; this makes the miscarriages. At least that's all they could find that could cause it and I've had three miscarriages.

No. 912 93 074 44 years old Married in 1944 1 daughter	I'd been married about 3 years and I had an operation and it took another 8 years for me to become pregnant. This year I went for a cervical test and they could not find the neck of my womb—the doctor thinks it must be twisted up into the pelvis. The operation was to help me have a baby. Don't know what was wrong except that I had very heavy periods—I still have now and they come every three weeks not every 28 days.
No. 913 32 104 33 years old Married in 1955 1 daughter	It just hasn't happened although we were hoping to have another. (Not seen a doctor)
No. 607 01 062 35 years old Married in 1953 1 adopted son	We've been in hospital for tests and although the tests haven't shown any reason why we can't have any, we just haven't. Doctor's opinion: "He said it was one of those things that happened to some people."
No. 714 73 023 34 years old Married in 1953 1 son	I have trouble with my glands and get tablets. My periods stopped altogether—not ovulating at all, doctor said.

It seems probable that information reporting the husband's disabilities was less reliable since it depends on the wife's interpretation of the situation.

No. 912 53 054 28 years old Married 1959 1 son	We are only 50% each. Sperm count is 50% of normal and not very fertile. Doctor's opinion: the doctor said husband's pants were too tight which sterilises men.
No. 913 23 056 39 years old Married 1967 (husband married before but without children)	This is because my husband had a wound in the war and he's only got one kidney—this can interfere with his child creating. Doctor's opinion: well he had to have treatment which interferes with the productive organs—he's been married before and they never had any children.

Just over two-thirds of women who said it was "difficult" for them to have children said that a doctor had been consulted about the disability but in only a minority of the cases was he of the opinion (it was stated) that a successful pregnancy was unlikely. In the remaining cases, the chances of a successful pregnancy were said to be "fair" or "good" or there was "no reason" for an unsuccessful pregnancy. About a third of those who had not consulted a doctor assessed their own chances of a successful pregnancy as "poor".

Thus about one in five married women under 45 years of age assesses her future fecundity as impossible or difficult. In about half of these cases, the description seems reasonable in the light of the information given about the operation or because of the opinion of the doctor consulted. In the remaining cases either the informant had not visited a doctor and the assessment was her own or, in the doctor's opinion, a successful pregnancy was possible (but not necessarily advisable). However, without professional diagnostic methods the opinions of the women concerned are the only guide we have to the physical limitations to fecundity.

4.2(ii) SUMMARY OF FUTURE FECUNDITY

To summarise the distribution of fecundity at the time the investigation was carried out, the informant's assessment of her (and her husband's) future situation and her statements about the difficulty of conception in the past together with information on the couple's last use of contraceptive methods and the incidence of pregnancy were combined to form a more comprehensive index of the likelihood of future pregnancies. Appendix C gives the definition.

Five main categories were distinguished. The first contained those informants who had had (or their husband had had) a sterilising operation or who had passed the menopause or whose doctor was "very sure" that they could not have a child. These couples were described as "definitely sterile" (when considering *future* fecundity). That is, future sterility is often the result of an operation. Those for whom a successful pregnancy was not impossible but for whom it was painful or dangerous to their health or where their doctor thought conception unlikely or advised against it together with those who had tried to conceive without success were described as "probably sterile", in some cases from choice. The "sub-fecund" category included those who described any future pregnancy as difficult for such reasons as "tilted womb", "husband has low sperm count", or difficulties of conception due to the ages of husband or wife. Included also were those informants who said that they had not used a contraceptive method since 1958 and whose pregnancies were lower in number than might be expected if no contraceptive had been used.* The remaining group were sub-divided into those who said that they were aware of no physical difficulty in having children in the future but had, in the past, felt that there was some difficulty either in conception or in producing live-born children and those who had no difficulty in the past.

The reasons for thinking that their fecundity in the past might have been limited varied from the imaginary to the physical, as these examples show:

No. 911 41 078 30 years of age married 1957 1 child (born 1966)	Because first one died—a case of mind over matter. No reason really, just had that feeling.
No. 911 71 054 34 years of age married 1962 3 children (born 1963–1966)	We couldn't have intercourse and my doctor advised me to have the membrane cut otherwise I wouldn't have been able to have a family.

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*It is possible that these informants did not like to admit the use of contraceptives although they were being used. This seems unlikely since they were prepared to say that they had used them in the past.

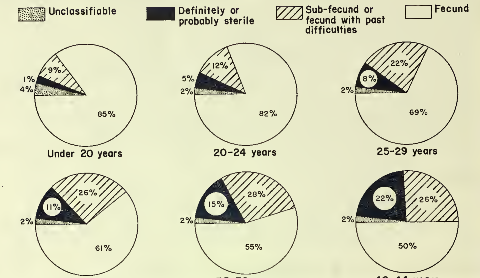


FIG. 4.1 DISTRIBUTION OF *FUTURE* FECUNDITY OF WOMEN – BY AGE LAST BIRTHDAY

But it is interesting that, as a group, those who thought that they had bad difficulties in the past in producing a live-born child have and expect to have larger families on average than those unaware of any past limitations to their fecundity.

There was also, of course, a small group of informants for whom the information available was not sufficient to enable us to place them in a specific category.

Considering, then, future fecundity at a point in time, the distribution for married women below the age of 45 years is given in Table 4.1.

TABLE 4.1

Percentage distribution of the future fecundity of women (analysed by wife's age last birthday)

	Total	Age last birthday					
		Under 20	20–24	25–29	30–34	35–39	40–44
	%	%	%	%	%	%	%
Definitely sterile	4	—	1	2	3	5	10
Probably sterile	8	1	4	6	8	10	12
Sub-fecund	9	4	5	8	10	10	10
Fecund but with past difficulties	14	5	7	14	16	18	16
Fecund	63	85	82	69	61	55	50
Unclassifiable	2	4	2	2	2	2	2
Base	6,306	96	972	1,290	1,315	1,414	1,217

Obviously with increasing age there is a greater probability of some restriction of fecundity; it affects 32% of married women between 40 and 44 years of age. About 13% of married women in the main child-bearing years between 20 and 30 are already aware of some limitation to future child-bearing.

4.2(iii) Involuntary impairment and family size

The main questions on impairment are:

(a) whether the impairment occurs before or after the main child-bearing period and hence whether it affects the size of families and

(b) whether the sub-groups in the population who expect to have smaller families than the earlier marriage cohorts are disproportionately affected by disabilities which affect fecundity.

The first question is considered in this sub-section; the second in the following.

It becomes apparent from Table 4.2 that women with different types of impairment are differentially affected in the number of children they have (and in the number they expect to have—Table 4.3).

TABLE 4.2

Mean number of living children
(analysed by date of marriage and future fecundity)

Date of marriage	Future fecundity					
	All groups	Definitely sterile	Probably sterile	Sub-fecund	Fecund and past difficulties	Fecund
All dates	1·9	2·7	1·5	1·0	2·3	1·9
Before 1945	2·7	(3·8)	(1·8)	(1·7)	(2·9)	2·8
45–49	2·4	2·8	1·5	1·6	2·7	2·5
50–54	2·4	2·8	1·6	1·3	2·7	2·5
55–59	2·1	(2·7)	1·8	1·0	2·3	2·3
60–64	1·5	(1·4)	1·3	0·5	1·5	1·6
65 or later	0·4	(0·0)	(0·3)	(0·1)	(0·5)	0·4

Women who are definitely sterile with respect to the future—that is, they or their husbands have undergone a sterilising operation or their doctor was "very sure" about their inability to have a child—have, on average, a larger number of children than even those classified as fecund. The exceptions are confined mainly to the latest cohorts where those who are definitely sterile in this way are a numerically small (1 % of the post-1959 cohorts) and probably an unusual group. Thus couples who become sterile after ten or more years of marriage have, on average, a family comparable in size to those with no known difficulties.

TABLE 4.3

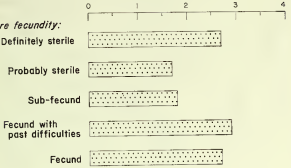
Mean most likely number of children expected
(analysed by date of marriage and future fecundity)

Date of marriage	Future fecundity					
	All groups	Definitely sterile	Probably sterile	Sub-fecund	Fecund with past difficulties	Fecund
All dates	2·6	2·7	1·7	1·8	2·9	2·7
Before 1945	2·7	(3·8)	(1·8)	(1·7)	(3·0)	2·8
45–49	2·5	2·8	1·5	1·8	3·0	2·7
50–54	2·7	2·8	1·7	1·6	3·0	2·9
55–59	2·7	2·7	1·9	1·8	2·9	2·9
60–64	2·5	(1·4)	1·7	1·8	2·7	2·7
65 or later	2·5	(0·0)	(1·8)	(1·9)	2·7	2·5

This suggests that in most cases positive and total sterility affects a couple only after they have produced a family of a size comparable to, if not marginally larger than, other groups in the population—again with the exception of those married after 1959 and sterile. For example, of those married before 1960, 27 % of those definitely sterile *in the future* had no child or one; 27 % of all women married before 1960 also had no child or one at the time of the interview. The "definitely sterile" were no more likely than the population in general to have particularly small families.

The "probably sterile"—those for whom a successful pregnancy was unlikely or dangerous to their general health—and the "sub-fecund" whose infecundity

FIG. 4.2 **MEAN NUMBER OF CHILDREN EXPECTED — BY FUTURE FECUNDITY**



was attributed to disorders of the reproductive system had on the other hand fewer children on average than the fecund group and they expect to have on average a smaller family. It could be concluded that such limited fecundity affects women throughout their child-bearing years and will ultimately affect their final family size. Thus Table 4.4 shows that women affected by all degrees of infecundity during the main child-bearing years between 20 and 29 indeed expect to have, on average, fewer children than the fecund. Those definitely sterile in the higher age groups do not necessarily expect a smaller family.

TABLE 4.4

Mean most likely number of children expected
(analysed by wife's age last birthday and future fecundity)

Age last birthday	All groups	Future fecundity				
		Definitely sterile	Probably sterile	Sub-fecund	Fecund with past difficulties	Fecund
All ages	2·6	2·7	1·7	1·8	2·9	2·7
Under 20	2·5	—	(3·0)	(1·8)	(2·4)	2·7
20–24	2·6	(1·9)	(1·9)	(2·1)	2·7	2·6
25–29	2·7	(2·3)	2·0	2·0	2·9	2·8
30–34	2·8	(3·2)	1·9	1·9	3·2	2·9
35–39	2·6	2·9	1·9	1·6	3·0	2·8
40–44	2·3	2·6	1·3	1·5	2·6	2·5

It is of interest that those classified as fecund with respect to the future but who considered that they had had past difficulties in conception or in producing live-born children have or expect to have, in most cases, a slightly larger number of children than those who were not aware of any past difficulties. Perhaps the knowledge of past difficulties results in these couples making less consistent use of contraception and hence they are likely to produce marginally larger families.

It could be argued that the smaller families expected by those with limited fecundity may be a function not of their infecundity but of a desire to have smaller families. However, analysing ideal family size according to the different fecundity categories produces no evidence which supports this hypothesis.

TABLE 4.5

Mean ideal number of children†
(analysed by date of marriage and future fecundity)

Date of marriage	All groups	Definitely sterile	Probably sterile	Sub-fecund	Fecund with past difficulties	Fecund
Before 1945	2·7	(2·7)	(2·8)	(2·4)	(2·7)	2·6
45–49	2·6	2·7	2·6	2·6	2·6	2·6
50–54	2·6	2·9	2·6	2·5	2·6	2·6
55–59	2·5	(2·6)	2·7	2·4	2·5	2·5
60–64	2·4	(2·4)	2·4	2·4	2·5	2·4
65 or later	2·5	(3·0)	(2·7)	(2·5)	(2·6)	2·4

† . . . ideal for families "like yourselves".

Women who are "probably sterile" or "sub-fecund" have, in general, the same mean ideal family size as those who are fecund. In fact, ideal family size remains remarkably consistent throughout all categories of fecundity.

4.2(iv) The incidence of involuntary impairment upon the groups expecting smaller families

Since, in general, the groups expecting smaller families are those married in 1960 or later, physical impairment of fecundity at the time of the investigation is not likely to be a major factor in bringing about this reduction in family size. It is possible that women in these cohorts may undergo sterilising operations in the future, but those who have already done so are not, in general, members of the groups expecting smaller families.

Of the particular groups who do expect smaller families—of those married under 20 years of age, for example—11 % of those married after 1959 were aware of some degree of impairment compared with 33 % for those who married before 1945. The incidence of physical limitation in the later cohorts is certainly no greater than that in the earlier and is unlikely to result in smaller families.

It is possible however that those who already had four children at the time of the investigation may be increasingly using sterilisation as a method of family limitation. There is some evidence that there is a significant increase in the "definitely sterile" category for those with five or more living children and in almost all cases this was brought about by a sterilising operation. There is no evidence, however, that this practice is more likely to take place for later rather than earlier cohorts (Table 4.6) and, hence, no reason for assuming that sterilisation as a method of family limitation will increasingly affect the family sizes of later cohorts. It remains a possibility, but the numbers in the sub-groups are too small to provide reliable evidence either way.

TABLE 4.6

Percentage of couples classified as "definitely sterile"
(analysed by number of living children and date of marriage)

	Number of living children						
Date of marriage	0	1	2	3	4	5	6 or more
	%	%	%	%	%	%	%
All dates	4	2	3	4	7	13	22
	[1,083]	[1,475]	[2,084]	[962]	[423]	[196]	[124]
Before 1950	11	7	8	8	10	22	20
	[93]	[221]	[397]	[212]	[121]	[58]	[59]
1950–59	8	3	3	3	6	12	23
	[265]	[508]	[1,083]	[582]	[280]	[88]	[65]
1960 or later	2	*	1	2	(5)	(20)	—
	[725]	[746]	[604]	[168]	[22]	[5]	—

Base figures given in square brackets.

4.3 THE EXTENT OF VOLUNTARY LIMITATION

Excluding women who said it was impossible for them to have children in the future and those who were permanently separated from their husbands, 79 % of married women under 45 years acknowledged the present use of some method of voluntary limitation or regulation of their families. These methods were either said to be used by the woman herself or reported by her as being used by her husband. A further 11 % were not using any method currently but had done so in the past (over half of these women were pregnant at the time of the interview and a further third wanted a baby). 10 % of women "at risk" had never used any form of contraception or did not acknowledge the fact.

Given the method of eliciting the information, interviewers found very little reluctance on the part of women to discuss the subject. Women who were not pregnant at the time of the interview were asked whether they or their husbands were doing anything to limit the size of their families or to plan when they have their children. Those who spontaneously replied that they did were then shown a card listing and numbering the more usual methods of contraception and asked to call out the numbers of the methods they or their husbands were currently using. Women who did not spontaneously acknowledge the use of contraception were asked about methods "which may not be considered family planning"—withdrawal by the husband or the use of the safe period, for example. They were further asked whether they had used a method of family limitation in the past and which method they had 'last' used. Questions to pregnant women followed the same procedure, but they referred to events in the past.

It is possible, of course, that such a method of obtaining the information may put at a disadvantage the less literate informants who did not recognise when written down the method of contraception used. But the majority of respondents appeared to recognise the methods they were using although they may not have identified some of the other methods listed. Omitted also would be any method of family limitation not listed on the card (induced abortion, for example). Finally, of course, we asked about only the methods used "now" or in the immediate past and intentions in the future. We have no record of changes in contraceptive method that have occurred during the course of a marriage.

Of those who were, in fact, using some form of family regulation at the time of the study, about three quarters mentioned it spontaneously; the remainder acknowledged the use of the methods "which may not be considered family planning".

As a check on the claims of the 10 % of married women at risk who said that they had never used a method of family limitation, the number of pregnancies they had had was compared to the number that could have occurred to women of their ages and durations of marriage, given unlimited fecundity.* This comparison is given in Table 4.7.

Where the number of pregnancies experienced is of the order of the number possible, then it is unlikely that the couple have used a method of regulating their family. A number greater than the number possible is usually the result of pregnancies not carried to full term. Where the number experienced is below the number possible either the couple are sub-fecund without being aware of it or there has been some form of family limitation used. The data suggest that in fact 68 % of these women had experienced at least one pregnancy fewer than was to be expected with unlimited fecundity; 56 % (that is, more than half) had experienced two or more pregnancies fewer. This proportion increased with the length of the marriage so that, among women who had been married long enough to experience five pregnancies, 92% said that they had been pregnant fewer than five times while 88% had been pregnant only three or fewer times. Either the women were sub-fecund or were using some method of family limitation. Section 4.3(iv) points out that a substantial minority of those who had never used contraception were classified as sub-fecund, but there still remain about one in five of those who say they have never used contraception (about 2% of married women under 45 years) whose pregnancies were lower in number than might have been expected from unrestricted fecundity. It is possible that they do not wish to acknowledge the use of contraception. However, in the absence of any further information, these couples will continue to be regarded as never having used contraception, but any findings are subject to the reservation that some of these couples might be practising some method of family limitation.

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*The guide to the number of pregnancies which might have occurred to women of particular ages married at specific ages, if their fecundity had been unlimited, was provided by Professor D. Glass—to whom thanks are given. See Appendix C. Summary 14.

TABLE 4.7

Those who had never used a method of family planning
Percentage distribution of pregnancies experienced according to number possible, given wife's age at marriage and duration of marriage

Number of actual legitimate pregnancies	Number of possible pregnancies							
	All groups	0	1	2	3	4	5	6 or more
	%	%	%	%	%	%	%	%
All groups	100	100	100	100	100	100	100	100
0	32	66	38	47	25	34	26	14
1	27	31	39	20	27	24	23	25
2	18	2	15	25	29	16	25	20
3	11	—	8	5	14	16	14	16
4	5	—	—	3	6	5	4	10
5	2	—	—	—	—	3	4	4
6 or more	5	—	—	—	—	2	4	12
Base	591	86	66	60	49	62	73	194

Of those who are using or who have used a method, three-quarters say they always use a method, almost all the remainder say they sometimes "take chances". Not surprisingly, taking chances increased with the recency of the marriage. Consequently proportionately fewer of the women with four or more children took chances (18% compared with 24% for the whole group); taking chances was more frequent among couples where the husband was in manual employment.

4.3(i) The use of contraception

Women's views on who, husband or wife, should take precautions to avoid pregnancy have changed considerably since marriages in the 1940s. An increasing proportion of women married more recently felt that it is the women who ought to take precautions—but this was still the view of only a third of those married after 1964. This proportion applied both to those who use (have used) contraception and those who have never done so but intended to. For the moment, considering only those who use or have used family planning, women married under the age of 20 years exhibited the greatest increase in the proportion who thought that the responsibility for taking precautions ought to be the woman's, comparing those who married before 1945 with those who married after 1964.

TABLE 4.8

Couples who are using (have used) contraception
Percentage of women who think that women ought to take precautions to avoid pregnancy
(analysed by wife's age at marriage and date of marriage)

Date of marriage	Wife's age at marriage All ages	Under 20	20–24	25–29	30 and over
	%	%	%	%	%
All groups	24 [5,178]	25 [1,475]	23 [3,004]	26 [598]	22 [99]
Before 1945	17 [139]	16 [97]	(19) [43]	—	—
45–49	17 [751]	20 [180]	16 [535]	(17) [36]	— —
50–54	21 [1,083]	23 [260]	20 [661]	22 [156]	(17) [6]
55–59	24 [1,284]	21 [325]	25 [740]	24 [187]	(19) [32]
60–64	28 [1,347]	31 [439]	26 [706]	31 [159]	(21) [43]
65 or later	34 [573]	36 [176]	33 [319]	30 [60]	(33) [28]

Base figures given in square brackets.*

Altogether, 24% of married women using contraception felt that the avoidance of pregnancy ought to be the woman's responsibility, 37% thought it ought to be the husband's and most of the remainder (36%) felt that both should be responsible. Proportionately more women with husbands in manual occupation felt the responsibility ought to be the husband's (41%) or both husband's and wife's (37%) compared with those in non-manual employment (31% and 34% respectively). More of those who claimed a non-Christian (including agnostic) affiliation or whose husbands were Catholics while they themselves were not, felt that the responsibility ought to be the wife's. For those with four or more children, 40% (compared with 36% for all women) felt that the responsibility should be shared.

Changes according to date of marriage do not suggest that women with four or more children exhibit an increased inclination to take upon themselves the responsibility of avoiding pregnancies. Women married before 1950 and now having four or more children were marginally more likely than those with two or fewer children to feel that it ought to be the wife's responsibility, but the largest increase in this opinion is surprisingly to be found among those with few or no children. One would have thought that it would be the women in the earlier cohorts with few children—those whose families could be considered as complete—who would feel the most compulsion to control their fertility; but it is women married more recently and with a relatively small family who were more likely to feel that the avoidance of pregnancy was the wife's responsibility. (Table 4.9).

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*An error in computation resulted in the omission of 20 women from this table: 10 from the 1955–59 cohort, 5 from the 1950–54 cohort, 2 from the 1960–64 cohort and 3 from the 1965 or later cohort. 8 were married under 20 years of age, 9 were married 20–24 years and 3 were married 25–29 years. Such omissions are unlikely to affect the conclusions.

TABLE 4.9

Couples who are using (have used) contraception
Percentage of women who think that women ought to take precautions to avoid pregnancy
(analysed by number of living children and date of marriage)

Date of marriage	Number of living children					
	All groups	0	1	2	3	4 or more
	%	%	%	%	%	%
All dates	24 [5,178]	29 [725]	22 [1,205]	23 [1,847]	25 [848]	23 [553]
Before 1950	17 [891]	(17) [47]	12 [163]	14 [333]	22 [173]	23 [175]
1950–1959	23 [2,367]	25 [138]	17 [485]	23 [964]	24 [523]	23 [357]
1960 or later	30 [1,920]	31 [540]	28 [657]	30 [550]	32 [152]	(19) [21]

Base numbers given in brackets*

Since only a quarter of the women felt that they themselves ought to take precautions to avoid pregnancy, this is reflected in the methods of contraception actually used (or last used). In discussing methods of contraception, the methods being currently used and those "last" used by couples not currently practising family regulation have been considered together. Some individuals used more than one method of contraception. So that, in order to gauge the reliability of the methods used by individuals, a summary of current usage was devised. This summary is discussed first, before considering the distribution of individual contraceptive methods.

The details of the summary are given in Appendix C. (Summary 18). Basically, the sheath, loop, cap used with spermicide, aerosol foam and the contraceptive pill were regarded as reliable methods of contraception, the remainder as less reliable. Couples were classified according to their current reproductive situation and the method of contraception used. Where both a reliable and a less reliable method were used, the couple was classified as using a reliable method.

The distribution of married women under the age of 45 years by the summary and by date of marriage is given in Table 4.10.

Of all such women, 54 % are using or have used reliable methods of contraception, 18 % have never used any method of contraception or have no need, the remaining 28 % make use (or did) of what we considered to be the less reliable methods of contraception—the use of the safe period*, withdrawal, douching, the use of a cap without a spermicide or of a spermicide without a cap or the use of suppositories. Withdrawal is the most favoured of these less reliable methods. Excluding those who had never used family planning and those who could not be classified, the ratio of users of reliable to less reliable methods was approximately 2:1. This ratio showed a steady increase for the later cohorts, so that the ratio of users of reliable to less reliable methods for those married after 1964 was about 8:3. The significance of this increase in the use of reliable methods of contraception is, in fact, greater than the figures suggest since many couples in the later cohorts still intend to have children and, therefore, have less need to avoid pregnancies. However, it needs to be borne in mind that, among the most recent cohort, a disproportionately large number of women had not yet used contraception at all.

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*See note on previous page

TABLE 4.10

Use of family planning
(analysed by date of marriage)

Use of family planning	Date of marriage						
	All groups	Before 1945	1945 –1949	1950 –1954	1955 –1959	1960 –1964	1965 or later
	%	%	%	%	%	%	%
Uses reliable method at present	47	31	40	47	52	49	47
Uses less reliable method at present	25	37	33	27	24	20	17
Wants baby/is pregnant but used reliable method before	6	2	1	2	6	12	12
used less reliable method before	3	—	1	1	3	5	5
Not using method for other reasons but							—
used reliable method before	1	2	2	*	1	1	*
used less reliable method before	*	—	*	1	*	—	—
Never used any method	9	10	8	9	7	9	17
Others (i.e. "impossible" to have children etc.)	9	19	15	13	8	5	2
Base	6,306	193	968	1,370	1,501	1,564	706

The use of reliable rather than less reliable methods of contraception was also associated with the husband's socio-economic group (Table 4.11) and with educational level (Table 4.12). Couples where the husband was in a managerial occupation were more likely to use or have used reliable methods of contraception, compared with those in manual occupations. Similarly, the ratio of reliable to less reliable users ranged from 1·3:1 for the group where the husband had completed his education below the age of 15 years to 3·6:1 for couples who had both completed their education at 16 years or older. Couples where at least one of the partners had completed their education at 16 or older were more likely to use reliable methods of contraception.

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*Under certain circumstances, the safe period can be regarded as a reliable method of contraception, but further questioning of the users about what they understood by the "safe period" and how they calculated it, led us to believe that in most cases it is a haphazard method of contraception. For example, of those currently or last using the safe period as a method of contraception, only 15% correctly identified the safe period as before the onset of menstruation. 45% thought it was both before and after.

TABLE 4.11

Use of family planning
(analysed by husband's socio-economic group)

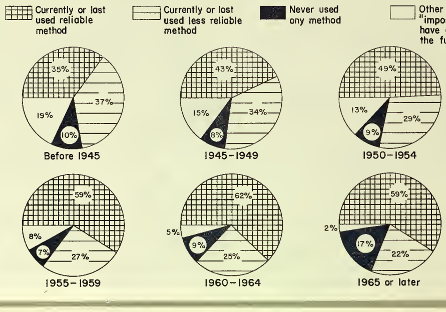
Use of family planning	All groups	Managerial	Non-manual	Skilled manual	Other manual
	Husband's socio-economic group				
	%	%	%	%	%
Uses reliable method at present	47	56	52	45	38
Uses less reliable method at present	25	19	21	26	30
Wants baby/is pregnant but					
used reliable method before	6	7	7	6	5
used less reliable method before	3	2	3	3	3
Not using method for other reasons but					
used reliable method before	1	1	1	1	1
used less reliable method before	*	*	*	*	*
Never used any method	9	6	7	10	13
Others (i.e. "impossible" have children etc.)	9	9	9	8	9
Base	6,306	1,111	1,251	2,544	1,355

TABLE 4.12

Use of family planning
(analysed by age completed full-time education)
Age completed full-time education

Use of family planning	All groups	Husband: under 15 Wife: all ages	Husband: 15 years		Husband: 16 or over	
			Wife: under 15 or 15	Wife: 16 or or over	Wife: under 15 or 15	Wife: 16 or or over
	%	%	%	%	%	%
Uses reliable method at present	47	40	45	55	53	59
Uses less reliable method at present	25	32	26	18	18	16
Wants baby/is pregnant but						
used reliable method before	6	2	8	10	9	8
used less reliable method before	3	2	4	3	2	3
Not using method for other reasons but						
used reliable method before	1	1	1	*	1	1
used less reliable method before	*	*	*	—	*	*
Never used any method	9	11	10	8	6	6
Others (i.e. "impossible" to have children, etc.)	9	11	6	6	11	7
Base	6,306	2,203	1,845	422	645	972

FIG. 4.3 USE OF FAMILY PLANNING — BY DATE OF MARRIAGE



Examining in greater detail those who married below the age of 20 years and those who at the time of the investigation already had four children—the groups who in the more recent cohorts expect smaller families—to investigate changes in contraceptive use by marriage cohort, the interpretation is complicated by the large proportion in the most recent cohorts who had never used any contraceptive method. However, the data do suggest that the 1960–64 cohort who married under the age of 20 years (and not particularly affected by "never used any method") were more likely to use or have used reliable methods of contraception compared with the earlier cohorts (Table 4.13). Again, there is the suggestion that women married more recently and having four or more children were more likely than those who married earlier and have the same number of children to use reliable rather than the less reliable methods of contraception (Table 4.14).

TABLE 4.13

Those married under 20 years of age
Use of family planning
(analysed by date of marriage)

Use of family planning	All married women	Those married under the age of 20 years Date of marriage						
		Before 1945	1945–49	1950–54	1955–59	1960–64	1965 or later	All dates
	%	%	%	%	%	%	%	%
Uses reliable methods at present	47	30	41	51	49	51	45	47
Uses less reliable method at present	25	39	33	26	25	19	16	25
Wants a baby/is pregnant								
but used reliable method before	6	1	*	3	6	12	13	7
used less reliable method before	3	—	3	1	4	4	7	3
Not using method for other reasons but								
used reliable method before	1	2	2	*	1	1	*	1
used less reliable method before	*	—	*	—	—	—	—	*
Never used any method	9	9	8	8	8	6	18	9
Others (i.e. "impossible" to have children etc.)	9	19	13	11	9	7	1	9
Base	6,306	132	227	321	384	501	217	1,782

A proportionately more frequent use of the less reliable methods was found among couples classified as "fecund but with past difficulties in having children". For this group, the ratio of users of reliable to less reliable methods was approximately 3:2. This perhaps accounts for the finding in Section 2 that they have and expect to have marginally larger families than even those who categorise themselves as fecund. The sub-fecund, although proportionately more of them have never used contraception at all or do not do so at the moment because of a desire for a child, do, if they use contraceptives, use reliable ones in the same ratio as the population in general.

TABLE 4.14

Those with four or more living children
Use of family planning
(analysed by date of marriage)

Use of family planning	All married women 16–44 years of age	Those with four or more children Date of marriage			
		Before 1950	1950 –59	1960 or later	All dates
	%	%	%	%	%
Uses reliable method at present	47	41	51	(52)	47
Uses less reliable method at present	25	29	29	(22)	29
Wants a baby/is pregnant but					
used reliable method before	6	—	1	*	1
used less reliable method before	3	1	1	—	1
Not using method for other reasons but					
used reliable method before	1	2	*	(4)	1
used less reliable method before	*	—	1	—	*
Never used any method	9	9	5	(11)	7
Others (i.e. "impossible" to have children etc.)	9	17	12	(11)	14
Base	6,306	238	433	27	698

4.3(ii) Contraceptive methods used

Information on particular methods of contraception used was also obtained in the interview. Again, in discussing these methods, the methods currently being used and those "last" used by couples not currently practising family regulation for whatever reason, have been considered together. Thus among those using contraception or who had done so, the use of the sheath by the husband or the practice of coitus interruptus (referred to during the interview and in this report as "withdrawal") were the methods most frequently used. Both methods are of course dependent on the husband's co-operation.

80% of the women said that they used only one method of contraception, 14% used more than one, but not simultaneously, 5% used more than one method either simultaneously or at different times. For example, 34% of couples used withdrawal as a method of contraception. Of these, approximately seven in a hundred combined withdrawal with another method of contraception on the same occasion, four in a hundred used withdrawal alone but on other occasions used other methods, while the remainder used withdrawal only. Of those who used the pill, two in a hundred combined its use with another method on the same occasion and two in a hundred also used alternative methods.

Considerable variations in the methods used were exhibited by different groups in the population. For the purpose of this study, we shall be concerned mainly with those marrying after 1959 who expect to have smaller families—in particular those who married under the age of 20 years and those with four or more living children. The habits of those with husbands in a manual occupation are considered in less detail. The use of contraceptive methods by couples of different educational levels and of different religious affiliations is also examined briefly.

TABLE 4.15

Contraceptive method "now" or "last" used
(analysed by date of marriage)

Contraceptive Method	Date of marriage						
	All groups	Before 1945	1945 –1949	1950 –1954	1955 –1959	1960 –1964	1965 or later
	%	%	%	%	%	%	%
1. Sheath	42	40	42	41	42	42	41
2. Husband withdraws	34	45	41	37	32	30	29
3. Contraceptive pill	17	2	8	14	18	23	24
4. Safe period/rhythm method	11	4	12	10	11	13	10
5. Cap with Jelly or Cream	8	6	6	8	8	7	10
6. Suppositories	3	4	5	3	2	3	2
7. Abstinence	2	6	1	1	2	2	3
8. Loop	2	—	1	2	3	2	*
9. Douching	1	—	3	1	1	1	1
10. Cap used by itself	1	3	1	1	1	1	1
11. Jelly/Cream without cap	1	1	1	1	1	*	1
12. Aerosol Foam	*	1	*	*	*	*	1
No answer	*	1	1	*	*	*	*
Base	5,198	139	751	1,088	1,294	1,349	576

Variation according to marriage cohort (Table 4.15) indicates that withdrawal as a method of contraception has been declining continuously since marriages in the early 1940s. The sheath remained the most frequently used method for all cohorts except the earliest and its use remained at a constant level throughout. The use of the contraceptive pill has been increasing and its increase is particularly noticeable among those married between 1960 and 1964 compared with the earlier cohorts.

Analysis of the data by the husband's socio-economic group and the couples' level of education and religion shows that the sheath is used by proportionately more husbands in managerial and non-manual occupations, where the husband but not the wife completed his education over 15 years of age, but by proportionately fewer couples where both are Catholic. Withdrawal is most common among husbands in manual, particularly in non-skilled manual occupations and—related to this—where the husband completed his education below the age of 15 years. Withdrawal is used comparatively rarely by couples where both husband and wife completed their education at 16 years or older. The pill is used almost equally throughout all socio-economic groups, least by Catholic couples but perhaps relatively more by Catholic wives of non-Catholic husbands. The safe period is used relatively more frequently by Catholic couples, but even among these only 31% of couples who regulate their families use it. A greater percentage (39%) use withdrawal as a contraceptive technique. (Tables 4.16–4.18).

If the use of the sheath and withdrawal is classified as male methods of contraception, then at least half of the couples in all the sub-groups examined rely on these methods. They were least likely to be used where both husband and wife completed their education over 15 years of age. In this group, women were more likely than in other groups to use the safe period and the cap with a spermicide.

FIG. 4.4 CONTRACEPTIVE METHODS USED — BY DATE OF MARRIAGE

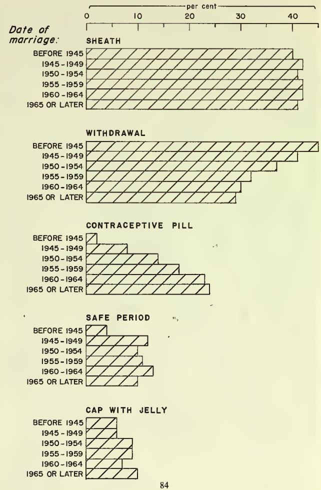


TABLE 4.16

Contraceptive method "now" or "last" used
(analysed by husband's socio-economic group)

Contraceptive Method	Husband's socio-economic group				
	All groups	Managerial	Non-Manual	Skilled Manual	Other Manual
	%	%	%	%	%
1. Sheath	42	44	47	42	34
2. Husband withdraws	34	21	24	40	44
3. Contraceptive pill	17	17	15	17	19
4. Safe period/rhythm method	11	15	12	9	11
5. Cap with Jelly or Cream	8	14	11	5	5
6. Suppositories	3	3	4	2	3
7. Abstinence	2	2	3	2	2
8. Loop	2	3	2	2	2
9. Douching	1	1	1	1	2
10. Cap used by itself	1	2	1	*	1
11. Jelly/Cream without cap	1	1	1	*	*
12. Aerosol Foam	*	*	1	*	*
No answer	*	*	1	*	*
Base	5,198	950	1,059	2,107	1,058

TABLE 4.17

Contraceptive method "now" or "last" used
(analysed by age completed full-time education)

Contraceptive Method	Age completed full-time education					
	All groups	Husband under 15 Wife all ages	Husband: 15 years		Husband: 16 years or over	
			Wife: under 15 or 15	Wife: 16 or over	Wife: under 15 or 15	Wife: 16 or over
	%	%	%	%	%	%
1. Sheath	42	40	39	46	50	43
2. Husband withdraws	34	44	32	27	26	13
3. Contraceptive pill	17	11	21	22	18	19
4. Safe period/rhythm method	11	9	9	8	14	16
5. Cap with Jelly or Cream	8	5	4	9	10	17
6. Suppositories	3	3	3	2	3	3
7. Abstinence	2	2	2	2	1	3
8. Loop	2	2	2	1	2	3
9. Douching	1	1	2	*	2	1
10. Cap used by itself	1	1	1	1	1	1
11. Jelly/Cream without cap	1	1	*	1	1	1
12. Aerosol foam	*	*	*	*	—	1
No answer	*	*	*	*	*	*
Base	5,198	1,716	1,550	371	543	853

TABLE 4.18

Contraceptive method "now" or "last" used (analysed by religion)

Contraceptive Method	Religion						
	All groups	Husband & Wife Christian but not Catholic	Wife: Catholic Husband: Other Christian	Wife: Other Christian Husband: Catholic	Husband & Wife Catholic	Husband & Wife non-Christian	All other combinations
	%	%	%	%	%	%	%
1. Sheath	42	45	31	34	24	37	35
2. Husband withdraws	34	34	35	35	39	25	31
3. Contraceptive pill	17	16	21	17	12	23	27
4. Safe period/ rhythm method	11	10	17	15	31	7	11
5. Cap with Jelly or Cream	8	8	6	7	4	10	8
6. Suppositories	3	3	2	6	2	2	1
7. Abstinence	2	2	2	3	3	3	4
8. Loop	2	2	2	1	2	4	4
9. Douching	1	1	3	2	1	1	4
10. Cap used by itself	1	1	1	*	1	1	1
11. Jelly/Cream without cap	1	1	*	*	1	*	*
12. Aerosol Foam	*	*	*	*	—	*	2
No answer	*	*	—	*	—	*	—
Base	5198	3864	229	214	331	329	231

We turn now to those groups, married after 1959, who expect smaller families than those who married in the 1950s. Current contraceptive effectiveness of the more recently married cohorts needs to be assessed with the qualification that these women are probably still in the process of family building. Their current practice is not necessarily an indication of their ultimate efficiency in this respect. This applies particularly to those who married under 20 years, more recently. Nevertheless, Table 4.19 suggests that the use of the pill amongst the post-1959 cohorts has increased while the use of withdrawal is less common than among earlier cohorts who married under 20 years. Since there is also likely to be a change to the use of reliable methods of contraception by those married under 20 years particularly in 1960–1964 (Table 4.26), there is every reason to expect that their use of contraception will be more efficient than the earlier cohorts.

Analysis according to the number of living children women have suggests that women with four or more children are more likely to use the pill than those with fewer children but less likely to make use of the sheath (Table 4.20). Use of withdrawal is, however, more frequent than for couples with two or three children. The extent to which this has changed among the more recently married is illustrated in Table 4.21. The use of withdrawal is declining and of the pill (and the loop?) increasing, but again numbers are too small to allow authoritative conclusions to be drawn.

TABLE 4.19

Those married under 20 years of age
Contraceptive method "now" or "last" used
(analysed by date of marriage)

Contraceptive Method	Date of marriage						
	All dates	Before 1945	1945 –1949	1950 –1954	1955 –1959	1960– 1964	1965 or later
	%	%	%	%	%	%	%
1. Sheath	37	40	37	36	34	38	39
2. Husband withdraws	37	44	44	37	36	33	34
3. Contraceptive pill	26	2	11	23	25	32	29
4. Safe period/rhythm method	8	4	12	9	8	7	10
5. Cap with Jelly or Cream	6	5	8	7	4	5	7
6. Suppositories	2	4	4	2	2	2	2
7. Abstinence	2	9	1	2	2	2	2
8. Loop	2	—	1	2	4	2	—
9. Douching	2	—	4	1	2	2	1
10. Cap used by itself	1	3	2	1	2	*	1
11. Jelly/cream without cap	*	—	1	—	*	*	1
12. Aerosol Foam	*	1	—	—	—	*	—
No answer	*						
Base	1,485	97	180	261	330	440	177

TABLE 4.20

Contraceptive method "now" or "last" used
(analysed by the number of living children)

Contraceptive Method	Number of living children					
	All groups	0	1	2	3	4 or more
	%	%	%	%	%	%
1. Sheath	42	49	43	44	36	30
2. Husband withdraws	34	27	38	33	32	37
3. Contraceptive pill	17	17	13	16	21	24
4. Safe period/rhythm method	11	11	13	10	13	11
5. Suppositories	8	12	7	8	8	5
7. Abstinence	3	3	3	3	3	4
8. Loop	2	1	3	2	2	2
9. Douching	1	1	1	1	2	3
10. Cap used by itself	1	2	*	1	1	1
11. Jelly/Cream without cap	1	1	*	*	1	1
12. Aerosol Foam	*	1	*	*	*	1
No answer	*	1	*	*	*	—
Base	5,198	727	1,213	1,853	850	555

TABLE 4.21

Those with four or more living children
Contraceptive method "now" or "last" used
(analysed by date of marriage)

Contraceptive Method	Date of marriage			
	All dates	Before 1950	1950 –59	1960 or later
	%	%	%	%
1. Sheath	30	37	28	(14)
2. Husband withdraws	37	40	36	(29)
3. Contraceptive pill	24	18	26	(43)
4. Safe period/rhythm method	11	11	10	(10)
5. Cap with Jelly or Cream	4	5	5	—
6. Suppositories	4	5	3	(5)
7. Abstinence	2	2	2	—
8. Loop	4	2	5	(19)
9. Douching	3	5	2	—
10. Cap used by itself	1	2	*	—
11. Jelly/Cream without cap	1	1	1	—
12. Aerosol Foam	1	1	1	—
Base	555	175	359	21

Changes in contraceptive methods used by the husband in manual occupations over time support the previous indications that, among groups who expect smaller families, the use of withdrawal is less frequent while that of the contraceptive pill is increasing.

TABLE 4.22

Those with husbands in manual occupations
Contraceptive methods 'now' or 'last' used
(analysed by date of marriage)

Contraceptive Method	Date of marriage			
	All dates	Before 1950	1950 –59	1960 later
	%	%	%	%
1. Sheath	39	38	39	39
2. Husbands withdraws	41	49	41	36
3. Contraceptive pill	18	8	16	24
4. Safe period/rhythm method	10	9	10	11
5. Cap with Jelly or Cream	5	5	3	5
6. Suppositories	3	3	2	2
7. Abstinence	2	2	2	2
8. Loop	2	1	3	2
9. Douching	2	2	1	2
10. Cap used by itself	*	1	*	1
11. Jelly/Cream without Cap	*	*	*	*
12. Aerosol Foam	*	*	—	1
Base	3,165	533	1,443	1,189

4.3(iii) Past use of family planning

The previous section dealt with the current use of contraception and its possible implications, in terms of ability to determine size of family, for those later marriage cohorts who seek to have smaller families. Further evidence about their likely achievement could be gained by examining changes in the extent to which families have been planned or unplanned in the past. First we look at changes in how soon after marriage contraception was started and then at the extent to which past pregnancies had been planned.

13% of married women using contraception indicated that they had been pregnant at marriage*, 47% said that they had begun to do "something to prevent pregnancy" within a month of their marriage while 39% had left it till later—the main reason being not minding or positively wanting to have a child. If those who had never used contraception are combined with users who had started contraception later than a month after marriage, the proportion of married women† who had started within a month of marriage falls to 42%.

TABLE 4.23

Those married under 20 years of age and who have used contraception
When contraception was started
(analysed by date of marriage)

When started	Date of marriage						
	All dates	Before 1945	1945 –1949	1950 –1954	1955 –1959	1960 –1964	1965 or later
	%	%	%	%	%	%	%
Within a month of marriage	31	25	26	27	31	32	40
Later	42	56	52	52	43	36	19
Other answers	*	1	1	—	—	—	—
No answers	2	2	1	1	2	3	3
Pregnant at marriage	26	17	20	20	24	29	38
Base	1,477	97	180	260	325	439	176

Women marrying more recently—and particularly those married after 1964—were increasingly likely to use contraception within a month of marriage. 43% of women married between 1950 and 1954 (and who had used contraception) had begun to do so within a month of marriage. For those married in 1965 or later, the corresponding proportion was 64%. However, an increasing proportion of those marrying more recently indicated that they had been pregnant at marriage. Earlier use of contraception was also associated with a higher age of marriage. Women marrying below the age of 20 years were least likely to use contraception within a month of marriage (31% compared with 47% for all married women using contraception) and showed a greater tendency to be pregnant at marriage (26% compared with 13% for all married women) but among those marrying more recently under 20 years an increasing proportion say they used contraception earlier (and were likely to be pregnant at marriage) (Table 4.23).

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*There is no comparable figure for those who had never used contraception since a direct question was not put on this subject.

†Excluding women who say it is "impossible" to have more children and those permanently separated from their husbands.

Those with a greater number of children still alive were also least likely to have started contraception early. Similarly, a smaller proportion (32%) of women with husbands in manual occupations compared with those in managerial occupations (61%) started contraception early.

Past use of family planning was gauged by answers to questions asking women who had used contraception the circumstances under which each of their pregnancies had occurred—whether it was before they had started using a method of family planning, while using a method and not wanting a pregnancy or whether they took a chance or whether it was a deliberately planned pregnancy. The answers to these questions together with information on the current contraceptive practices of those who had *never* been pregnant were combined to form a summary (Summary 20 in Appendix C) of past family planning use. It must be remembered that this summary excludes information from those who do not now use contraception because they find it impossible to have a child in the future (though their past pregnancies might have been planned) and, of course, those who have never used contraceptives. It cannot be automatically assumed that those who have never used contraception produce unplanned pregnancies. It may be deliberate intention on their part to refrain from using methods of family regulation in the early stages of marriage until a specific number of children have been produced. In this sense, the pregnancies could be said to have been planned. However, the answers to a direct question on the circumstances of conception obtained from those who had never used methods of family planning would be meaningless; it is doubtful whether women could realistically distinguish between the planned and unplanned pregnancies if contraception had not been used. Hence, the main table in this section (Table 4.24) is concerned with couples who have used contraception.

Changes in family planning over time are not, unfortunately, attributable solely to changing habits. Such inferences are confounded by differences in the stages in family building at which couples find themselves. Thus, 39% of women married after 1964 (and using contraception) were using contraception currently but had never been pregnant. The comparable percentage for those married 1960–1964 was 9%. Similarly, those longer married have risked a greater number of pregnancies and hence were more likely to have had an unplanned one. Nevertheless, comparisons can be made between groups expecting smaller families and the general population to assess the use of family planning but only *within* each marriage period.

Thus for each cohort, women married under the age of 20 years were more likely than the total population of women to have experienced their pregnancies before using a method of contraception or not to have deliberately planned their pregnancies. And, for each cohort, women with four or more children were very much less likely than women in general to have deliberately planned all their pregnancies. Perhaps more important, relatively few (15% in the earlier cohorts) said that the pregnancies had occurred before the use of contraception;

over 70% said that their pregnancies had not been planned at all or some were and others were not planned. Past performance, then, does not increase confidence in the ability of these particular groups to restrict the size of their families. On the other hand, past habits are not necessarily a reliable guide to future action where contraception is concerned because, as couples approach the size of the family they think desirable, there is some evidence to suggest that their use of family planning becomes more efficient. For this reason, in Section 4.3(v) we go on to look at the methods of family planning couples intend to make use of in the future. Before doing so, we need to examine also those women who claimed never to have used a method of family planning so that their future intentions can also be incorporated into the section dealing with the use that couples intend to make of contraception in the future.

TABLE 4.24

Past use of family planning
(analysed by date of marriage)

Past use	Date of marriage: Before 1950			1950–59			1960 or later		
	All married women*	Those married aged under 20 years	Those with four or more living children	All married women*	Those married aged under 20 years	Those with four or more living children	All married women*	Those married aged under 20 years	Those with four or more living children
	%	%	%	%	%	%	%	%	%
Never pregnant, planning now	3	2	—	3	1	—	18	11	—
Never pregnant, not planning now	6	3	—	7	3	—	10	6	—
All pregnancies before using method	18	21	15	14	19	15	15	24	(57)
All pregnancies before method or planned	9	8	5	9	10	6	7	9	(5)
All pregnancies not planned	24	33	42	22	30	44	18	23	(29)
Pregnancies both planned and unplanned	19	18	33	18	20	29	9	10	(10)
All pregnancies deliberately planned	21	16	4	27	18	6	22	18	—
Base	868	251	156	2,353	562	335	1,977	606	21

*"at risk" in the future

4.3(iv) Those who have never used contraception

Compared with the whole group of married women, a higher proportion of those married in 1965 or later claimed never to have used any type of contraceptive method. Similarly, a disproportionately large number were found among those who had married older—particularly those who had married at 30 years of age or over since 1960. (Table 4.25).

28% of those who said that they had never used contraception were classified as sub-fecund because they had difficulties in conceiving (compared with 9% of

TABLE 4.25

Percentage in each group who have never used contraception (analysed by wife's age at marriage and date of marriage)

Date of marriage	Wife's age at marriage				
	All ages	Under 20	20–24	25–29	30 and over
	%	%	%	%	%
All dates	10	9	9	13	29
	[5,802]	[1,639]	[3,326]	[694]	[140]
Before 1945	12	11	14	—	—
	[158]	[106]	[50]	—	—
45–49	10	9	10	8	—
	[834]	[198]	[597]	[39]	—
50–54	10	9	10	12	14
	[1,213]	[286]	[734]	[182]	[7]
55–59	8	8	6	12	24
	[1,408]	[358]	[792]	[214]	[42]
60-64	10	6	9	13	32
	[1,495]	[473]	[775]	[183]	[63]
65 or later	17	18	15	21	36
	[698]	[214]	[378]	[76]	[28]

Base figures—number in each group excluding those who are permanently separated from their husbands and those who say it is "impossible" for them to have children—are given in square brackets.

all married women) while 24% (compared with 16%) expected to have, at most, one child. Thus a substantial minority of those who had never used contraception had married late—and particularly married late more recently—and/or had limited fecundity.

42% of all "non-users" readily said that they intended taking precautions to avoid pregnancy "sometime later on"—when they had had an average of 2·7 children. Of the remainder, two in five said that they were unlikely to conceive in the future.

Those remaining "at risk" were further prompted about the use of family planning. Three in ten were reluctant to commit themselves to the use of family planning in the future. That is, of all married women "at risk", 2% had never used contraception and were unlikely to do so.

This proportion is too small to have any significant effect on the achievement or otherwise of the smaller families expected by the later cohorts. Although the proportion does vary among the sub-groups expecting to have smaller families, in none is the variation sufficiently large to make the non-use of contraception of importance in achieving or not the smaller families for the groups as a whole (individuals will, of course, be affected).

4.3(v) The future use of family planning

To assess the prospects for those who expect smaller families, a measure of future contraceptive practice would be a better gauge than current or past practice. Obviously this information is not as validly obtained as, say, current family planning habits. Nevertheless, in certain cases the information could be regarded as valid. For example, women already using particular contraceptive methods who reply in the affirmative when asked if they will continue with these methods, probably will continue with them—in the absence of a major change in the methods or products available. And, of course, in the absence of a major loss of confidence in the contraceptive pill. It is possible that those who opt to continue with the less reliable methods may change their minds later on and continue with the more reliable methods. The contrary situation seems less likely unless there is considerable loss of confidence in the contraceptive pill. The information given by those who have never used contraception but express the intention of doing so is more problematical. Yet, in the absence of more authoritative information, intentions are some guide to future action.

Excluding women who say it is "impossible" for them to have children (and those permanently separated from their husbands), the future use of family planning by married women under 45 years can be summarised:

		%
1.	Used reliable methods of contraception and will continue with them	56
2.	Used reliable methods but will discontinue them*	3
3.	Used less reliable methods and will use reliable in future	8
4.	Used less reliable methods and will continue with them	22
5.	Never used any method but will use reliable method in future	3
6.	Never used any method but will use less reliable method in future	1
7.	Never used any method and does not know about future	6
	Base (those "at risk")	5,750

To what extent are those in the more recent cohorts who anticipate smaller families more likely to use the more reliable methods of contraception? First, changes according to the different cohorts suggest that more of the recently married intend, ultimately, to use the more reliable methods of contraception. If we combine all the categories where the future intention is to use reliable methods, 76% of women married after 1959 anticipate using reliable methods compared with 52% married between 1945 and 1949. More specifically, data for those married under the age of 20 years suggest an even greater increase in the proportion intending to use reliable methods of contraception—from 55% for those married between 1945 and 1949 to 83% for those married between 1960 and 1964. The comparable percentage for the 1955–59 cohort is 74%.

Changes for those who already have four or more children suggest an increased proportion of women in the later cohorts intending to use reliable methods of contraception—but, of course, the number of women married after 1959 with four or more children is too small to enable reliable conclusions to be drawn.

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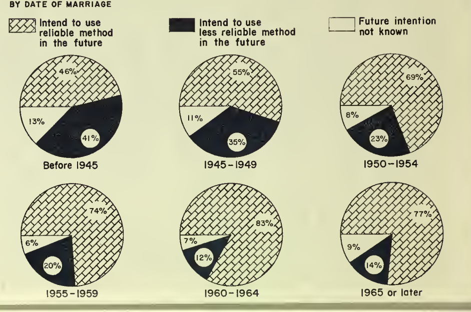
*About a third of the women in this group misunderstood the question and implied that they would not use a reliable method in the immediate future because they wanted a child. The question did not refer to the immediate future.

FIG. 4.5 THOSE MARRIED UNDER 20 YEARS OF AGE — FUTURE USE OF FAMILY PLANNING — BY DATE OF MARRIAGE



The use of reliable or less reliable methods in the future is also associated with the informants' assessment of their future fecundity. More of the subfecund have never used any contraception and have no intentions with respect to the future or will discontinue the use of contraception. Those with past fecundity difficulties are, proportionately, more likely to use the less reliable methods of contraception and are marginally more likely to continue with them. 72% of the fecund say that they will, eventually, use reliable methods of contraception. In all cases, the use of the reliable methods by those more recently married is likely to increase.

This suggests that couples are fairly realistic in their use of contraception. Those most at risk are very likely to use reliable methods of contraception and increasingly so among those more recently married. The exceptions are those who are classified as "fecund but with past difficulties". This group would warrant further investigation since their "past difficulties" may lead them to underestimate their present fecundity.

TABLE 4.26

Those married under 20 years of age
Their future use of family planning
(analysed by date of marriage)

Future use	All married women "at risk"	Those married under 20 years of age Date of marriage						
		Before 1945	1945–49	1950–54	1955–59	1960–64	1965 or later	All dates
	%	%	%	%	%	%	%	%
1. Used reliable methods of contraception and will continue with them	56	38	48	59	58	65	57	57
2. Used reliable methods but will discontinue them	3	3	3	2	3	4	2	3
3. Used less reliable methods and will use reliable in future	8	8	7	8	12	14	11	11
4. Used less reliable methods and will continue with them	22	40	34	22	19	12	12	20
5. Never used any method but will use reliable method in future	3	—	*	2	4	4	9	4
6. Never used any method but will use less reliable method in future	1	1	1	1	1	—	2	1
7. Never used any method and does not know about future	6	10	8	6	3	3	7	5
Base (those "at risk")	5,750	107	198	286	351	468	214	1,624

Table 4.27

Those with four or more living children
Their future use of family planning
(analysed by date of marriage)

	All married women "at risk"	Those with four or more living children Date of marriage			
		Before 1950	1950 –59	1960 or later	All dates
	%	%	%	%	%
1. Used reliable methods of contraception and will continue with them	56	50	56	(58)	54
2. Used reliable methods but will discontinue them	3	2	3	(4)	3
3. Used less reliable methods and will use reliable in future	8	7	11	(13)	9
4. Used less reliable methods and will continue with them	22	30	24	(13)	26
5. Never used any method but will use reliable method in future	3	1	2	(8)	2
6. Never used any method but will use less reliable method in future	1	1	—	—	*
7. Never used any method and does not know about future	6	9	4	(4)	6
Base (those "at risk")	5,750	197	380	24	601

4.4 SUMMARY

The number of children couples might have may be limited by some physical disability affecting fecundity and/or by the use of contraception.

About one in five married women under the age of 45 years assessed their *future* fecundity as "impossible to have children" or "difficult to have children". In about half these cases the description seemed reasonable in the light of the information given about a sterilising operation or because of the opinion of the doctor consulted. In the remaining cases either the informant had not visited a doctor and the assessment was her own or, in the doctor's opinion, a successful pregnancy was possible (but not necessarily advisable).

Couples who could be said to be definitely sterile at the time of the interview already had (and expected to have), on average, families of a size comparable to the fecund. Those who were classified as "probably sterile" or sub-fecund had and expected to have smaller families, on average.

Since it was couples in the older age groups who were more likely to be subject to physical impairments to fecundity, the possible effects of such impairments on the later cohorts in achieving their smaller families is likely to be minimal. There is some evidence to suggest that couples with five or more living children are disproportionately more likely to have had a sterilising operation, but no evidence to suggest that this occurs more often in the more recent rather than in the earlier marriage cohorts.

Almost all couples "at risk" (98%) had used or intended to use methods of contraception of varying degrees of reliability, as a means of regulating their families. The use of the sheath and the practice of withdrawal were the most frequently used of the accepted methods of family limitation. Withdrawal was less frequently used by those marrying more recently while the contraceptive pill was used with increasing frequency. In general, couples marrying more recently make greater use of what could be termed the "reliable" rather than the less reliable methods of contraception. This applies particularly to one of the main groups who expect smaller families—those who married under the age of 20 years. The same cannot be said with equal confidence about those who have four or more children.

The past use of contraception also does *not* suggest that those with four or more children in the later cohorts are particularly prone to have planned their families. However, this is not necessarily a valid measure of future contraceptive practice. A slightly higher proportion of women with four or more children think that the responsibility for family planning should be shared between husband and wife rather than be the responsibility of one or other partner.

Future intentions with respect to family planning suggest that 67% of women "at risk" intend to use the more reliable methods of contraception in the future. The proportion for those who married after 1959 was 76% and for those who married under the age of 20 years the proportion was 81%. There is every indication that those who married under 20 years of age more recently will be in a better position than those who married young in the earlier cohorts to control their fertility more efficiently. The same conclusion, but put much more tentatively, can be said to apply to the future use of contraception by those who already have four or more children. However for this latter group the numbers involved are too small to allow reliable conclusions to be drawn.

5 FERTILITY DIFFERENTIALS

5.1 INTRODUCTION

The discussion in the previous sections was confined mainly to a consideration of "average" movements for women. Differences between sub-groups were small and in many cases declining from the earlier to the later cohorts but certain generalisations appear to hold: women who married under the age of 20 years had more children, expected a larger family and experienced a shorter interval between marriage and the birth of a first child than women who married later. In one case, it seems that the traditional fertility differences may be reversed: if expectations bear any relation to reality it may well be that women with husbands in managerial occupations marrying more recently will have families no smaller in size than those with husbands in manual occupations.

The investigation of such differences in the population serves two related purposes, apart from the academic one of providing more information. The first is that the isolating of groups which are homogenous with respect to fertility behaviour may suggest the possible "determinants" of such behaviour. Secondly, these differences between groups, whether suggesting "causes" of behaviour or not, could be used for prediction purposes to suggest future trends in ultimate family size. Estimates for the future will probably be more accurate if based on the movements of homogenous sub-groups in the population and a consideration of the relative importance of these sub-groups in the population than if they were based on extrapolation of past trends for the group as a whole.

This study is not primarily concerned with the "causes" of the differences in fertility behaviour but rather with the problems of prediction so that a check can be made on the estimates of ultimate family size made directly by the women. If the predicted ultimate family size confirms the expectations expressed by the women then this would increase confidence in expected family size as a valid measure of ultimate family size.

Decisions have to be made about the variables which are likely to distinguish between groups with different final family sizes in the population and also about their usefulness as predicting variables. In this section, the relationship between final family size and the individual variables will be looked at, while prediction will be considered in Section 6.

There exists in the literature (4, 6, 11, 13, 14, for example) a large number of hypotheses concerning the relationship between family size and the characteristics of families. Kiser and Whelpton(6) list and study 23 ranging from measures of personality to measures of economic status and security. The data they collected supported partially (their phrase) 14 of these hypotheses and one—concerning the positive relationship between economic security and family size—completely. Simple, uni-dimensional relationships have been demonstrated between various fertility measures—expected or actual family size—and educational level, religion, husband's occupation and degree of urbanisation. Similarly, there are data relating fertility measures with such concepts as relative income, length of paid employment after marriage(3) and attitudes(13).

Income and family size

The relationship between income and family size is more complex. The traditional negative relationship between income and family size has been gradually modified to a J-shape so that those with the smallest number of children are families with a medium-low income rather than a high one and evidence from this study suggests that the largest families are not particularly prevalent in the highest income group. Wrong(15) suggests that "among people of similar social class and occupational background, there is an inclination for those with the largest incomes to have larger families than their less prosperous fellows" and similarly there is a suggestion that among couples who consistently plan their children there is a positive relationship between income and family size. However the findings need to be heavily qualified because of the unsatisfactory nature of the measure of income. Apart from a variety of interpretations of an individual's or a family's income, it is a concept notoriously difficult to measure precisely within the context of surveys dealing mainly with other matters. The nature of the relationship demonstrated depends in part on the way the grouping of income has been drawn up. Further, the homogeneity of individuals within groups is likely to be low and the groups unstable over time. For example, a group with a relatively low income at a particular point in time consists of those whose future income is both low and potentially very high. Since family building is a long-term process, it is doubtful whether actual income at a point in time acts independently as a determinant of family size. Potential income, if it could be measured, might prove more satisfactory. Actual income as reported by the respondents has been looked at in this report within the main socio-economic groups, but the conclusions are still tentative.

Paid employment and family size

Two other variables which, because they are effective in distinguishing between families of different sizes only at a late stage in marriage have not been considered further in this report. The length of time a woman is in paid employment after marriage is related to family size but as a discriminating variable it only becomes useful after some ten years of marriage. Also as a "determinant" of family size it is qualified by the disparate nature of the group of women who have worked for a relatively long period after marriage: the group consists of women who choose to work and, therefore, limit the number of their children together with those who find themselves sterile or sub-fecund and as a consequence continue or return to work. For the latter (who probably constitute the larger part of the group) working appears to be a consequence of infecundity and not a cause of small families.

Contraception and family size

Contraception as a variable distinguishing between families of different sizes again becomes most effective only after the family has been completed: women who have planned all their children have smaller families than those whose children were unplanned or where some were planned and some not. There is evidence to suggest, too, that planning becomes more efficient the closer a couple approach the size of family they want. Hence, at a point in time, the users of less efficient methods of contraception include those who will continue with their use and those who will change to more reliable methods when they achieve their desired family. One of the few measures of contraception which does operate in distinguishing families of different sizes early on in the marriage is the planning or otherwise of the first child: those who did were likely to have smaller families, ultimately, than those who did not. But, because the investigation of fertility differentials was directed towards the problem of predicting ultimate family size for those just married as well as for those married longer, this difference was not pursued further in this report.

5.1(i) The method of analysis

To investigate the relationship between various material, cultural and attitudinal characteristics of women and their families and ultimate family size, the analysis was confined to women who were likely to have completed their families—in the specific sense of the definition in Appendix C* and the group is subject to the qualifications mentioned in Section 1.3(iii) of this report. The important distinction for prediction purposes was that between families of two children and families of three children. Hence the differences between these two sizes of family were investigated for two groups of women: those married between 1950 and 1954 and those married between 1955 and 1959.

The material and cultural differences will be considered briefly in the following section, since they are already well documented, while more attention will be given to the attitude measures used in this study. Perhaps it ought to be repeated that, over and above such differences as we are investigating here, the accepted standards prevailing in a community probably also have an effect on final family size, but such an investigation was outside the scope of this study.

5.2 THE RELATIONSHIP BETWEEN ULTIMATE FAMILY SIZE AND SOME MATERIAL AND CULTURAL CHARACTERISTICS OF FAMILIES

Differences between two and three child families were studied for a number of variables and the following have been selected for comment:

1. Husband's reported annual net income within each of the four socio-economic groups.
2. Measures of relative income.
3. Husband's socio-economic group.
4. Social mobility.
5. Religion.
6. Age at which full-time education was completed.
7. Number of children in wife's and husband's own families.
8. Wife's age at marriage.

Perhaps it ought to be said at the outset that two and three child families are, on the whole similar; the differences that emerge are small and are indicative of trends rather than dichotomies. In some cases the findings for the group married 1950–54 were not confirmed by the group married 1955–59 and vice versa. In part this may be due to real differences between the two groups and in some cases it is due to the small number of cases analysed (e.g. women with husbands in the managerial group who married between 1955 and 1959 and who had a completed family of three children numbered 24). Comment is confined mainly to those conclusions which are replicated.

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*Summary 21.

5.2(i) Husband's annual net income within socio-economic group

Income data were collected by asking women to allocate their husband's net income to one of eight pre-coded categories. For the purposes of analysis, the information was converted, where necessary, into annual amounts and when combined with socio-economic status the categories were reduced to five:

Less than £781 p.a.
£781—£1,000
£1,001—£1,300
£1,301—£2,100
£2,101 or more

According to this classification, *non-manual* (but not managerial) workers' families with three rather than two children were more likely to be found in the £781—£1,000 and the £1,301—£2,100 income categories. Two child families were more frequent in the £1,001—£1,300 range. The same discontinuous pattern exists for the *skilled manual* group, but the income categories have moved down one: three child families are relatively more frequent in the lowest and the £1,001—£1,301 income ranges, two child families in the £781—£1,000 range. *Managerial* and *manual* workers exhibit differences for the two marriage cohorts. This may suggest changes over time, but numbers are too small to be conclusive. For the *managerial* group, married between 1950 and 1954, there were no differences in the relative frequency of two or three child families for the different income groups but for the later cohorts those with incomes £1,001—£2,100 (and potentially higher?) were more likely to have three children. *Manual* workers married more recently were also more likely to have three rather than two children at the higher income ranges whereas, in the earlier cohort, three children were relatively more frequent below incomes of £781 and between £1,001 and £1,300. This may suggest a change, in this occupational group, to a positive relation between income and ultimate family size.

These findings, together with the problems associated with the measurement and interpretation of income data mentioned in the introduction to this section, suggest that the relationship between income and family size is more complicated than had previously been suggested, and that a number of intervening variables have an effect.

5.2.(ii) Measures of relative income

This was an attempt to measure how women felt about their income relative to other people's income and relative to their conscious needs. Differences between two and three child families were, on the whole small, apart from answers to a question which asked about income relative to the woman's assessment of her family's needs.

Feelings that income was "less than needed" were more likely to be associated with three child rather than two child families, but this may be a consequence of having three children.

TABLE 5.1

Size of completed Family (2 or 3 children)
(analysed by wife's opinion of family income relative to needs and date of marriage)

	Date of marriage			
	1950–1954 Number of children		1955–1959 Number of children	
	2	3	2	3
	%	%	%	%
Income was said to be				
Enough	73	63	74	60
More than enough	5	3	3	4
Less than needed	22	35	23	36
No answer	—	—	—	—
Base	246	231	205	269

In answer to a question comparing the husband's income with others in the same kind of job (where possible), three child families were marginally more frequent where the wives felt that they were either better or worse off than when they felt they were the same as others.

5.2(iii) Husband's socio-economic group and social mobility

The husband's socio-economic group was determined by occupation and social mobility was measured, somewhat crudely, by the difference in the manual/non-manual status of the husband compared with his father. The findings are as suggested in previous studies: two child families are more likely in the non-manual/managerial groups, three child in the manual group. The measure of social mobility suggests that two child families are associated with the non-manual status of the husband, particularly if his father had been in a manual occupation. That is, upward mobility is likely to be related to a smaller family. There is a suggestion that husbands in manual occupations whose fathers had been in non-manual occupations were marginally more likely to have three children.

5.2.(iv) Religion

The G.A.F. studies$^{(1, 2)}$ suggest that religion and the age at which education was completed (see below) were the two most important variables in distinguishing between families of different sizes. In England and Wales, this may be so, but the population is, religiously speaking, more homogenous in its claimed allegiances than the United States. The differences that exist suggest that families where both the husband and wife are Catholic are marginally more likely to have three rather than two children. For the earlier cohort, this was also true if the wife but not the husband was Catholic; for the later cohort it applied if the husband but not the wife was a Catholic. Differences are small, but it does suggest the possibility that the relatively more frequent use of the contraceptive pill by Catholic wives (Table 4.18), but not by the wives of Catholic husbands, may have had an effect on family size.

5.2(v) Age full-time education completed

The differences are best illustrated by a table.

TABLE 5.2

Size of completed family (2 or 3)
(analysed by age full-time education completed and date of marriage)

Age full-time education completed		Date of marriage			
		1950–54 Number of children		1955–59 Number of children	
		2	3	2	3
		%	%	%	%
Husband 15 or below	Wife 15 or below	58	68	55	57
	Wife 16 or over	12	12	13	13
Husband 16 or above	Wife 15 or below	11	8	8	11
	Wife 16 or over	15	10	21	15
No answer		4	2	3	4
Base		246	231	205	169

Whereas the earlier cohort exhibited the accepted association between less education and larger families, the later cohort suggests that this is changing somewhat and that three rather than two child families are more frequent where the wife particularly completed her full-time education early, but not necessarily the husband. However, the composition of the two cohorts is not similar with respect to age of completing full-time education. Because of the raising of the school leaving age, relatively fewer of the 1955–59 marriage cohort had left school below the age of 15 and most had left at 15 years of age. That is, most of the group had had a longer education than the earlier cohort.

5.2(vi) Number of children in wife's and husband's own families

Certain qualifications attach to the validity of this measure. Although the question was put in terms of the number of brothers and sisters the wife (and husband) had when they were growing up, it appears to have been answered in terms of the total number of children in the family. However, since it does distinguish between present families of different sizes, it has been included. Both measures seem to suggest that three child families are more frequent where the wife or husband are themselves one of three, four or more children. Two (rather than three) child families are more likely where the husband or wife was an only child.

5.2(vii) Wife's age at marriage

Evidence that the final number of children a woman has is related to the age at which she married has been demonstrated in previous studies and is confirmed in this, but there is evidence to suggest that the range in size is narrowing for the more recent cohorts. Data in Table 5.3 illustrate this trend.

TABLE 5.3

Mean size of completed family
(analysed by wife's age at marriage and date of marriage)

Wife's age at marriage	Date of marriage	
	1950–54	1955–59
Under 20	2·77 [150]	2·69 [127]
20–24	2·37 [436]	2·32 [290]
25–29	2·03 [126]	2·05 [91]
30 or over	(2·00) [20]	(2·25) [16]

Base figures are given in square brackets

5.3 THE RELATIONSHIP BETWEEN ULTIMATE FAMILY SIZE AND SOME ATTITUDE MEASURES

It is obvious that even within families of similar material and cultural background there are differences in ultimate family size. These could be described as springing from differences in the individuals concerned with building a family. Therefore measures which described the differences between individuals seemed called for if we were to try to account for all the variation in ultimate family size. Unfortunately the scope of the study excluded the possibility of measuring the characteristics of the husbands and so such measures express the individuality of the wives only. To the extent that husbands' attitudes and feelings play a part in determining the size of a family, the present study is deficient as it is, of course, in providing a comprehensive account of *all* possible attitudes that might have been appropriate to the wives.

5.3(i) The attitude measures

Direct measures of personality were not attempted since they had not proved very fruitful in previous studies (9, 10). Instead, measures were constructed of the attitudes and ideas expressed by women about motherhood, children and families. These derived from lengthy unstructured pilot interviews with some 70 women. The comments made by the women were carefully studied to see if any comprehensive dimensions which could be called attitudes could be discerned*. From all possible areas suggested by the data, measures were constructed using the precise comments made by the women themselves illustrating four attitudes which might be related to family size. These four measures could be said to describe:

(a) "personal" stress,
(b) children as status symbols,
(c) overcrowding and overpopulation,
(d) generally being in favour of motherhood and children.

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*Dr. A. N. Oppenheim very kindly undertook the preliminary investigation of these data and we are very grateful for his suggestions.

These measures were then included in the more formal pilot stage of the investigation in which information was obtained from approximately 200 married women The answers to the attitude statements were then subjected to a technique known as factor analysis* to see if they combined to form comprehensive indices of attitudes. In fact the processing suggested that (a) remained as a fairly consistent dimension and so too did (c). Factor (b) did not remain as a stable measure because the items included to measure it were unsatisfactory and (d) resolved itself into two "areas": one a basically negative attitude to motherhood and the other a positive one. The items illustrating attitudes (a), (c) and (d) were included in the final questionnaire. The answers to the relevant questions in the final questionnaire were again factor analysed and when the solution was rotated†, resulted in five dimensions which could be described as illustrating:

1. children are an encumbrance
2. there is a concern with overcrowding and overpopulation
3. material considerations are relevant where children are concerned
4. motherhood and children are satisfying
5. children need siblings and training in sharing‡

The actual composition of each attitude measure is given in Appendix C.

These five attitudes by no means account for all the variation in the answers given by the women. In fact, they only account for about a third of such differences, but as they express consistent ideas which, as we shall see later, relate to family size, they make some contribution to knowledge about individual variations in family size.

5.3(ii) The attitude measures and ultimate family size

A brief description of the attitudes is given first and then their relationship to family size is discussed.

Factor 1. *Antipathy to children.* Women scoring high on this attitude measure endorsed the idea that children "tie you down", "get on your nerves" and so on and expressed a negative reaction to such ideas as "most women find motherhood satisfying". A high positive score is associated with the greatest antipathy, a high negative score with the least antipathy to children.

Factor 2. *Fear of overcrowding.* A high positive score indicates a fear of overcrowding and overpopulation in relation to jobs and schools.

Factor 3. *Material condition.* A high positive score suggests that the women think that certain material requirements such as new clothes, a nice home and separate bedrooms are important for children.

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*See a good text book on multivariate analysis and/or Harman: Modern Factor Analysis.

†The principal components method was used to extract factors on a varimax rotation to concentrate the loadings on a few of the factors.

‡For the sake of brevity but not complete accuracy these attitudes have been referred to throughout the report as

1. antipathy to children
2. fear of overcrowding
3. material condition
4. partiality to children
5. socialisation.

Factor 4. *Partiality to children*. Women scoring high on this measure agreed with the ideas that "you always find the happiest families are those with a large number of children" or "having children is just a natural instinct in women", and other similar ideas. A high positive score indicates the strongest partiality to children.

Factor 5. *Socialisation*. A high positive score suggests that the women think that a child has a positive need for brothers and sisters and for training in sharing with others.

The relation between these attitude measures and family size is expressed in Table 5.4.

TABLE 5.4

Completed Families
Mean scores on attitude variables
(analysed by number of living children)

Number of living children	Number of married women	Factor				
		1 Antipathy	2 Over-crowding	3 Material conditions	4 Partiality	5 Socialisation
0	30	(0·60)	(0·07)	(0·33)	(−0·79)	(−0·62)
1	461	−0·18	−0·17	0·06	−0·33	−0·45
2	996	−0·10	0·19	−0·00	−0·31	0·12
3	468	0·08	0·08	−0·23	−0·00	0·26
4	197	0·25	−0·11	−0·32	0·33	0·48
5 or more	118	0·21	−0·29	−0·48	0·45	0·46
All women (completed families)	2,270	−0·02	0·11	−0·08	−0·16	0·07

Factor 1. Women with one child expressed least antipathy towards children, and the extent of the antipathy increased with an increase in family size, except for the very largest families. The greatest measure of antipathy however was expressed by women without any children (based on 30 replies).

Factor 2. Conciousness of overcrowding and overpopulation was highest among women with one or two children. There exists a negative relation between this measure and family size.

Factor 3. Again, the view that children have certain material requirements is negatively related to family size: women with larger families are least likely to agree that these material requirements are important for children.

Factor 4. Not surprisingly, partiality for children is associated with larger families. The least partial are those without children.

Factor 5. The importance of siblings and of training in sharing is said to be greatest among women with larger families.

These measures are taken as expressing consistently expressed attitudes. It is impossible within the context of this study to determine whether they are consciously held attitudes or rationalisations of subconscious feelings. But it is interesting that in most cases they relate to family size in a way which seems reasonable. The feeling that material needs are important is associated with a smaller, final family, even if the real reason for the limitation may be something else. This suggests that the measures have a heuristic value if none other. One perhaps surprising relationship is the negative one between antipathy and family size; that a greater degree of antipathy is to be found among those with larger families. It may be that this antipathy is a consequence of having a larger family and not a determinant or it may be that those who have fewer children do not feel very strongly about them, neither very much in favour nor very much against.

A more detailed study of the differences in the attitude measure between women with completed families of two and three children confirms the findings illustrated in Table 5.4. Women with three rather than two children are those with a greater measure of antipathy, particularly in the later cohort (does this suggest that the antipathy operates most when the children are young?), less concern with overcrowding and material conditions and a greater partiality to children, and they are more likely to obtain the highest score on the socialisation index.

One other measure which related to family size was that expressing the ages at which children were said to give most pleasure to women. Women with completed families of three rather than two children were more likely to say "Under two years of age" rather than older age groups as the age at which children gave them most pleasure.

5.4 SUMMARY

The main material and cultural characteristics of families of different sizes have been well documented in previous studies. Looking more closely at the differences between "completed" families of two and three children, these same measures describing socio-economic group, religion and educational level are still relevant as is the age at which the wife married. The analysis of income data suggests that its relationship with ultimate families size is complex, although the wife's view of the income as being sufficient or otherwise for the family's needs may suggest how income works as a "determinant" of family size. To be more useful in the context of family size, perhaps income in relation to expenditure patterns should be investigated.

The number of children in the husband's and wife's own families appears to relate to the number of children they have: three children families are more frequent where the husbands or wives themselves come from families of three or more children.

The attitude measures investigated described five consistent reactions to children and motherhood. These reactions can be briefly described as antipathy to children, a fear of overcrowding and overpopulation, a concern with the material needs of children, a partiality to children and motherhood and an awareness of social training for children. Women with larger final families exhibited a greater antipathy to children, a greater partiality and a greater awareness of the need for social training but less concern with the material needs and less fear of overcrowding and overpopulation than women with smaller families. The only exception was that, on average, the greatest antipathy to children was expressed by women who had none.

6 PREDICTING ULTIMATE FAMILY SIZE

6.1 INTRODUCTION

The size of families *expected* by women was the measure of ultimate family size used to investigate the likely changes between cohorts in the earlier sections of this report. It was, in fact, based on the women's judgements. Greater confidence would attach to these estimates if it could be shown by some more objective criterion that women's expectations were a valid measure of final family size. This section describes a method of providing such an objective measure by the use of discriminant analysis and comparing its results with the individual estimates provided by the women. The object was to derive a set of relationships based on objective measures which best distinguished women with final families of different sizes. The "best" relationship would be that in which the final family size derived from the analysis coincided with the actual final family size with the minimum of misclassifications. This relationship could then be applied to women whose final family size was still problematical to see to what extent the estimate derived from the discriminant analysis confirmed their stated expectations.

6.2 DISCRIMINANT ANALYSIS* AND ITS PRESENT APPLICATION

This is a technique for deriving functions based on a number of variables, which allows individuals from two or more populations to be allocated to those populations with the greatest probability of correct assignment. That is, a linear function of the variables is constructed such that the coefficients of the variables are chosen to maximise the probability of correct allocation to the parent population. In the absence of information about the parent population, these functions can be used for individuals for whom data are available on the associated variables to allocate them to the "correct" parent population with the greatest probability.

In using the technique in this study, two conditions for its proper application are not met. The first is that the independent variables used in deriving the relationship—those associated with final family size—are not all continuous normal variates. Most are qualitative variables which have been handled by assigning numerical values to the categories. Secondly, the relationship between the variables is not necessarily linear. However, the technique has proved useful in similar studies where these conditions have not been met. On the other hand, the fact that the underlying parent populations are distinct, i.e. families of different specific sizes, increases the probability of correct assignments.

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*The technique is discussed in:—
Rao, C. R. Advanced Statistical Methods in Biometric Research 1952 and
Kendall, M. G. A Course in Multivariate Analysis 1957.

An example is to be found in:—
Gales, Kathleen "Discriminant functions of socio-economic class" Applied Statistics June 1957 VI. No. 2.

Data from Section 5 of this report suggested a number of attributes associated with ultimate family size which could be used in deriving the discriminant function. Fifteen were selected as being likely to produce an efficient function and to be useful for prediction* purpose. In the event, it was decided to, in effect, standardise for two of these variables, religion and the age at which the women married, by confining the analysis to women married between 20 and 24 years of age and who were *not* (and whose husbands were not) Catholics. This was done, not because it was felt that these attributes had little to contribute to the power of the discriminant function, but rather that they would dominate it. It was the remaining variates about which there was most doubt.

The thirteen variates selected were:

1. Future fecundity
2. Husband's socio-economic group
3. Age completed full-time education
4. Size of wife's own family
5. Size of husband's own family
6. Relative income
7. Age at which children are said to give most pleasure
8. Social mobility

} Social measures

9. Antipathy to children
10. Fear of overcrowding
11. Material conditions
12. Partiality to children
13. Socialisation

} Attitude measures

The dependent variable was families with different numbers of children (initially 4 populations 0–1, 2, 3, 4 or more) for women who expected no more children and had married before 1960. The analysis was replicated by considering women married in the periods 1950–54 and 1955–59 separately. Linear functions of the thirteen variates were first computed for each cohort to classify individuals into one of these four groups. Comparisons were then made between the predicated and actual number of children the women had and the percentage of misclassifications calculated. Because there was a relatively high degree of misclassification on allocating to the four populations specified above, the analysis was repeated (again on the two cohorts) using a cruder, two-population allocation: two or fewer children, three or more.

6.3 THE RESULTS OF THE DISCRIMINANT ANALYSIS†

The interrelation between the actual number of living children which these women (who expected no more children) had and the number derived from the discriminant functions are detailed in Table 6.1 for the four-population solution and in Table 6.2 for the two-population solution.

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*The problems of prediction will be discussed in Section 6.6.

†The detailed results are to be found in Appendix F.

TABLE 6.1

Women* not expecting any more children
4-group discriminant analysis

Actual number of living children	Married 1950–54					Married 1955–59				
	Number obtained by discriminant					Number obtained by discriminant				
	0–1	2	3	4	Total	0–1	2	3	4	Total
0–1	**78**	22	14	19	133	**44**	14	5	8	71
2	47	**94**	37	24	202	35	**91**	37	18	181
3	20	24	**36**	29	109	11	19	**29**	22	81
4 or more	6	10	13	**46**	75	5	3	7	**26**	41
Total	151	150	100	118	519	95	127	78	74	374

TABLE 6.2

Women* not expecting any more children
2-group discriminant analysis

Actual number of living children	Married 1950–54			Married 1955–59		
	Number obtained by discriminant			Number obtained by discriminant		
	2 or fewer	3 or more	Total	2 or fewer	3 or more	Total
2 or fewer	**235**	100	335	**181**	71	252
3 or more	52	**132**	184	37	**85**	122
Total	287	232	519	218	156	374

Although, for the four-population solution, the largest single categories were those where the actual and derived numbers of children coincided, the percentage of misclassifications was of the order of 50%, and was particularly high for women who had two or three children. The order of misclassification was similar for both cohorts of women (Table 6.3). However, again for both cohorts, the mean values for the thirteen variables were significantly (statistically) different for the four groups, suggesting that they did constitute four distinct populations, but although this is a necessary condition for the discriminant function to be of use, in the present case the degree of misclassification makes it less than sufficient. The two-population solution was subject to a much reduced percentage of misclassification, though in achieving this the descriptions of the underlying populations became less specific.

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*Women married between the ages of 20 and 24 years and who were not and whose husbands were not Catholics.

TABLE 6.3
Discriminant analysis
Percentage of misclassifications

Actual number of living children	4-group analysis		2-group analysis	
	Percent 1950–54 marrieds misclassified	Percent 1955–59 marrieds misclassified	Percent 1950–54 marrieds misclassified	Percent 1955–59 marrieds misclassified
	%	%	%	%
0–1	41	38	30	28
2	53	50		
3	67	64	28	30
4 or more	39	37		
All categories	51	49	29	29

That is, about 71% of the women in both cohorts could be accurately allocated on the basis of the discriminant functions to either of the "two or fewer children" or the "three or more children" group.

6.4 PREDICTED FAMILY SIZE FOR WOMEN WHO MARRIED IN 1960 OR LATER

On the basis of the previous findings, it was decided to apply the two-population discriminant functions for women married between 1955 and 1959 to data for women married after 1959 who expected more children to gauge the extent to which the predicted and their expected numbers of children coincided. If, in most cases, they did, this would increase the confidence with which one could regard *expected* family size as a measure of ultimate family size: an objective measure would corroborate a subjective assessment. Again, the analysis was confined to women married between the ages of 20 and 24 years and where neither the husband nor the wife was a Catholic.*

A comparison of the predictions derived from the application of the discriminant functions with the stated expectations is given in Table 6.4.

TABLE 6.4
Women† married 1960–1967 and expecting more children
Application of discriminant function

Most likely number of children expected in total	Number obtained by application of 1955–59 2-gp. function		Total
	2 or fewer	3 or more	
2 or fewer	244	153	397
3 or more	159	274	433
Total	403	427	830

†Married between the ages of 20 and 24 years and who were not and whose husbands were not Catholics.

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*The analysis could, of course, be repeated for the omitted groups.

For 62% of the 830 women, the stated expectations and the predictions coincided; 29% of the women married after 1959 expecting more children said that they expected, in total, two or fewer children and this was confirmed by the predictions based on more objective evidence; 33% said they expected three or more, and again this was corroborated. Of the remainder, approximately half (153) said they expected two or fewer children but the more objective measure suggested three or more and for the remaining half (159) the reverse obtained.

This suggests that the *mean* expected ultimate and *mean* predicted ultimate family size will be similar. Assuming, in the absence of important changes in external conditions that might affect family size, that the "true" mean ultimate family size will be of the order indicated by one or other of these measures, this study like the G.A.F. studies may well achieve a coincidence of expected and actual values for mean ultimate family size by the cancelling out of errors of over-expectation and underestimation by equivalent-sized groups. This could be investigated further by looking at the groups for whom the expected and predicted estimates do not coincide, but the final answer can only be obtained by investigating the actual occurrence of births after a period of time and correlating the answers with the previous expectations.

6.5 THE PROBLEMS OF PREDICTION

Prediction is a hazardous exercise, rarely noted for its success; and its lack of success is readily apparent to all. In this study, two kinds of predictions are attempted:

1. depicting future movements in ultimate family size, based on the subjective assessment of individual women, and
2. predicting these future movements using more objective measures related to ultimate family size.

Similar movements or values in both measures provide a reassurance of likely future developments.

In neither of these predictions are we concerned with the extrapolation of past trends—a technique which has numerous problems of its own. The main problem in assessing the validity of predictions based on subjective assessments is obvious: how much of the expectation is in fact desire and how much is intention and what is their relation to the final reality? This is why an attempt was made to check these predictions by more objective means. Nevertheless, in carrying out the corroborating exercise, a number of assumptions were not made explicit and thus it is necessary to do both as an aid in "explaining" the consistency of the expected and predicted values and their dissonance. These assumptions relate to

(a) The choice of variables for prediction, and
(b) The use of functions derived from the data of the earlier cohort to to predict ultimate family size for the post-1959 cohort.

6.5(i) The choice of variables

The variables included in the prediction functions were selected from the socio-economic factors whose relationship with family size was already accepted.

The attitude measures originated in the pilot interviews for this study. These variables ignore, of course, external events which may influence family size, except in that the events may work through the characteristics attaching to the family. In the simplified model considered family size, divorced from the external norms, is said to be a function of the socio-economic characteristics of the family and the attitudes of the wife toward motherhood and children. This is obviously unrealistic; it would not be unreasonable to suppose that the attitudes of the husband play some part. Similarly, there is probably some interaction between external economic events and the social and personality characteristics of the family which influence family size.

Hence it is unlikely that the variables selected for the prediction would account for all the variation between families with different numbers of children. In fact, Sagi & Westoff (8) suggest that perhaps half of the variance in family size is random or quasi random to the extent that it is uncontrollable in fertility surveys. This is perhaps pessimistic, but it does indicate that predictions of family size based on related variables are unlikely ever to be perfect. This is not to say that the present exercise would not have derived functions which resulted in fewer misclassifications if different variables had been included. This applies particularly to the point in time at which the prediction is to be made. Predictions made, say, ten years after marriage and including variables such as the length of time the wife had been in paid employment or the extent to which pregnancies had been planned, might well have accounted for more of the variation in family size and produced better predictions. Since the length of the first internatal interval appears, at the present time, to be related to ultimate family size, there is a great deal to be said for confining such predictions of ultimate family size to women who had had at least one live birth and including the length of the interval in the prediction analysis. A balance needs to be struck between increasing the efficiency of the prediction and the limited usefulness of a prediction made too close in time to the event it is predicting.

6.5.(ii) The predicting function for the post-1959 cohort

In using the discriminant functions for the 1955–59 cohort to predict ultimate family size for those married after 1959, it is assumed that the external circumstances affecting the two cohorts will be similar. In general, this may be true, but in one specific it is not. The introduction and spread of the contraceptive pill occurred after 1960. This does not mean that its use is confined to those married after 1960 but, in practice, it is used more frequently by that group. To that extent, the application of the prediction function for the 1955–59 cohort to those married after 1959 has limitations.

It has nowhere been argued in this report that the efficiency of the contraceptive method used is a sufficient explanation of the differences in family size or that it is a prime determinant of family size: small families were evident before the widespread use of efficient methods of contraception. Rather, it is social, cultural and economic factors together with attitudes working through or expressing personal motivations which seem to be the main determinants of family size.

Nevertheless, it is possible that the advent of the contraceptive pill, in particular, may result in certain groups of the population being more able to express their motivations more effectively. This may well apply to those who married young and who, previously, tended to have larger families, but it is doubtful whether the availability of more efficient contraception will by itself result in a reduction in size for all families.

It seems, on the whole, unlikely that the use of the 1955-59 discriminant function to predict family sizes for the post-1959 cohort is very much affected by external events, because both cohorts will be affected by such events as the introduction of the contraceptive pill though at different stages in the marriage cycle, but it is possible.

The other main change in external conditions which might affect family size—the recent controversy in the Roman Catholic church—would not affect the predictions for the post-1959 cohorts since the analysis was confined to non-Catholics.

However, it needs to be pointed out that the extent of the dissonance is not solely attributable to deficiencies in the prediction function. It is probable that the concept of "expected" family size can be improved so that both prediction and expectation become more valid measures of ultimate family size.

6.6 SUMMARY

The variables associated with final family size discussed in the previous section were combined* to form functions which best distinguished between families of different (final) family size. From these functions, a 'predicted' final family size was obtained and this was compared with the actual family size of women who expected no more children. The functions were then applied to the data for women whose families were incomplete and the derived predicted family sizes were compared with the women's own expectations. To the extent that the more objective predicted values confirmed the subjective assessments, greater confidence would attach to expected family size as a valid measure of actual ultimate family size. The analysis was confined to women who had married between the ages of 20 and 24 years of age and who were not (and whose husbands were not) Catholics.

In the event, the most satisfactory solution was one which allocated the women to one of the two populations: having two or fewer children or having three or more. For women who expected no more children, approximately 70% of the predicted and actual values coincided: this applied to both women who had married between 1950 and 1954 and to those married between 1955 and 1959. Further investigation is needed to specify the characteristics of those for whom the predicted and actual family sizes differ.

The discriminant function derived from the 1955–1959 cohort was then applied to women whose families were incomplete and who had married after 1959. The predicted final family sizes obtained were then compared with the most likely† expected family size obtained directly from the women's answers to questions on the number of children they expected to have. In 62% of the

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*Using discriminant analysis.

†Appendix C. Summary 17.

830 individual cases the expectations were corroborated by the more objective predicted values. The distribution of the remaining cases was such as to suggest that the *mean* expected ultimate family size and the *mean* predicted ultimate family size would coincide. This lends additional confidence to the concept of mean expected family size as a valid measure of mean ultimate family size, although further investigation of the cases where the measures did not coincide would suggest for which individuals expected family size was less likely to be a valid measure of ultimate family size.

7 SUMMARY AND CONCLUSIONS

7.1 POPULATION PROJECTIONS AND FORECASTING

In making estimates of the future size of the population, demographers have tended to rely on projecting forward existing trends of births, deaths and migration. Acknowledgment is made to external influences such as the increased use of more reliable methods of contraception which may affect these trends in the future, but rarely have quantified weights been given to them. Mainly this is the result of difficulties in identifying the relevant influences and particularly their relationship with the demographic variables under study, partly it is inherent in the techniques of projection by the extrapolation of past trends that the system precludes any need for anticipating changes in trends. Even if the extrapolation process incorporates a system of continuous feedback, it takes some time before the significance of fluctuations can be appreciated and haphazard movements distinguished from changing trends. Hence if population forecasts are based almost entirely on the projection of existing trends, they tend to be overtaken by events.

To improve forecasts, projections need to be augmented by some other approach which would provide information on the likely limits to past trends or changes in their direction. Incorporating in population projections information that is available on likely movements in the future can only result in more accurate forecasts.

One approach when forecasting for demographic or social phenomena is to employ sample survey techniques to ask the individuals concerned what they intend to do in the future. In the case of forecasting future births, asking married women, particularly, how many children they expect to have in the future and when they expect to have them is likely to provide more reliable information on future changes than reliance on intuition. The use of this information on likely changes in trends in family size together with the techniques of projection can only result in better bases for forecasting.

7.2 THE USE OF SURVEY TECHNIQUES IN THE PRESENT STUDY

In the present study we were concerned with future births and more particularly with future family size. Family size, translated into "mean ultimate family size", because it is relatively stable in the short term is considered to be a more reliable measure of underlying trends in births and their effect on population size than, say, the various fertility rates which reflect aspects of population change not directly concerned with births. For example, changes in the general fertility rate incorporate changes in the proportion of women marrying as well as changes in the number and spacing of births.

Unfortunately, a woman's ultimate family size is indeterminate until the end of her child-bearing period. Hence, reliable data on ultimate family size and the changes in population they suggest relate to women who married some ten to fifteen years or more in the past. To obtain an insight into more recent movements in family size, an alternative measure of family size was sought, obtained not by extrapolation but by sample survey techniques.

The main measure compiled was that of "expected family size." Women were questioned carefully about the number of children they *expected* to have and when they expected to have them. Evidence from the "Growth of American Families" studies in the United States suggested that in the aggregate and for particular groups the number of children expected was a valid measure of the mean number of children born within a period of five years and probably of ultimate family size. The data were less valid for gauging when women would have their children. There is no reason to think that the experience with this measure in the United Kingdom should differ from that in the United States. In fact, with a smaller Catholic population and, therefore, less reluctance to use the more efficient methods of contraception, expected births may more readily conform to actual in the U.K. than in the U.S. Nevertheless, in the absence of a follow-up study some time in the future, the validity of expected births and expected family size as a measure of ultimate family size remains in question. Only repeated compilations of the measure and checking it against actual outcome could increase the confidence with which this kind of indirect measure can be used to anticipate ultimate family size.*

However, since this is the first survey of its kind, some assessment of the validity of the measure needed to be made. For women nearing the end of their child-bearing years expected family size was likely to be a valid measure of ultimate family size: in most of these cases, expected family size was identical with the number of living children the woman had. On the other hand, for women married more recently, expectations could fluctuate over the course of their child-bearing period and may, at the beginning, be more related to ideal family size than reality.

To check on the validity of women's statements about the number of children they expected to have altogether, an alternative indirect method of estimating ultimate family size was also employed. This required an investigation of the factors related to completed families of varying sizes and the construction of functions which discriminated between families of different sizes. That is, a more objective means of predicting family size was used in conjunction with the stated expectations and, to the extent that the two measures coincided for individuals, it seemed likely that their actual ultimate family size would also be of the same order and hence expected family size could be regarded with greater confidence as a valid measure of ultimate family size. The confirmation of the expectations by a more objective measure would suggest that the former is not completely divorced from reality.

In this study, then, survey techniques were employed to provide:

(i) information on expected ultimate family size to be used to suggest the trend in family size in the future.

(ii) a more objective predicted family size which was used to confirm (or otherwise) the stated family size expectations of the women.

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*For a criticism of the use of "expected family size" for forecasting purposes see (20). This analysis which is carried out in terms of *birth* cohorts rather than *marriage* cohorts comes to the conclusion that, in the United States " . . . . . cohorts in the early years of marriage, as compared with their immediate predecessors, will experience a substantial rise in the age of childbearing combined with a small decline in eventual mean parity."

(iii) information more detailed than could be obtained from previously existing official sources on the relationship between various demographic, social, economic and attitude measures and family size.

7.3 BRIEF SUMMARY OF THE FINDINGS

For each woman, three subjective estimates of her ultimate family size were compiled: maximum, minimum and most likely expected family size. (Definitions of these measures are given in Appendix C.) The values of the mean most likely expected family size were then compared with the values obtained from the more objective prediction functions. For women* married *before* 1959, the estimates of most likely expected family size and predicted family size coincided in over 70% of the cases. For 62% of the 830 women married *after* 1959 and expecting more children, their expected size of family was broadly confirmed by the more objective prediction despite the qualification that the prediction function used was derived from an earlier cohort and despite the uncertain nature of the concept of expected family size. The uncertainty could only be reduced by a follow-up survey which would confirm (or not) the validity of the definitions used. For these women, there is every reason to believe that their expectations with respect to family size are likely to be borne out in reality.

Of the remaining women, the expectations of approximately half overestimated the prediction and the opposite held for the residual half. Thus, *mean* expected family size and *mean* predicted family size coincided within the limits of measurable error. This suggested that for the women included in this analysis (namely, those married between the ages of 20 and 24 years and not Catholic), their *mean* most likely expected family size can with reasonable confidence be regarded as a valid measure of mean ultimate family size.

The cost of the investigation precluded a similar analysis for other subgroups in the population but assuming the general findings hold for these groups, what changes in ultimate family size are suggested by changes in expected family size?

First, and most important, the study suggested that women married since 1959 expect to have, on average, smaller families than those who married during the 1950s. The difference is not large but is statistically significant. The decline is particularly significant for women who married below the age of 20 years in the 1960s. It is this kind of data which is needed to augment the birth projections on which previous forecasts were based, and it has in fact been so used (18). Trends in family size based on marriages which took place in the 1940s and early 1950s suggested a continuing increase in family size, and the survey data directed attention to the point at which the trend was likely to alter and indicated, relatively, the size of the change.

The size of the anticipated decline in ultimate family size varied for different groups in the population. Apart from those who married young, it is most obvious among couples where the husband completed his education at 15 years of age rather than older and where his occupation was manual. Of course these groups overlap to a considerable extent. There is also evidence to suggest that those in the more recent cohorts who already had four or more children did not expect to have as large a family, on average, as those who had married earlier.

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*This analysis was confined to women married between the ages of 20 and 24 years of age and who were not and whose husbands were not Catholics.

How realistic are these expectations? Is there any evidence to suggest that those more recently married are likely to achieve the smaller families they expect? One source of evidence lies in the use of contraception by those more recently married. This is not, of course, the only possible limitation to a couple's fertility. Some couples suffer from involuntary infecundity, but there is no evidence from this study to suggest that the couples seeking to have smaller families are disproportionately affected in this way. There is some evidence to suggest that women who had experienced five or more pregnancies (or their husbands) were more likely than other couples to have undergone a sterilising operation, but no evidence to suggest that it is more frequent among the recently married.

The use of more reliable methods of contraception is, however, increasing among those married more recently, particularly among those women who married young, with husbands in manual occupations and/or with relatively less schooling—the groups who, in fact, anticipate smaller families compared with similar groups who married earlier. While it is nowhere argued that the availability of efficient methods of contraception is the *main* reason for an overall decline in mean family size—after all, the decline in family size in the first part of the 20th century took place before the most efficient methods were available and before the available methods were used widely—for some groups in the population it may be the means by which other motives for reducing the sizes of families become effective. The increasing use of the more reliable methods of contraception by those more recently married does suggest that their expectation of a smaller family is not completely unrealistic.

Thus there is reason to believe that, in part, at least the decline in the legitimate birth rate reflects the intention to have smaller families. To what extent does it reflect changes in the intervals between births? A decline in the legitimate fertility rate suggests, in the absence of countervailing influences, that there has been a lengthening of intervals between births and perhaps a delay in first births. Is this confirmed by the survey data?

Information on the subject of the lengths of intervals between births has to be interpreted carefully because of the qualifications attaching to the measures of family building available whether they originate from surveys or official registrations. Data on the lengths of intervals between births which have already occurred are difficult to interpret because of future births which would affect the mean length of intervals. For example, the mean length of the interval between first and second births can only be computed for those women who had experienced second births. Second births occurring in the future to other women cannot be incorporated in the measure except in a very general way and their effect on the mean length of the interval can only be to increase it, but to an unknown extent. This qualification which attaches to measures of family building affects particularly the more recent marriages since these cohorts are specially subject to future births.

The most obvious generalisation from the data is that the length of the childbearing period had been declining, for those who had planned their families as well as for those who have not. But, for the more recent cohorts, enough of the women have not yet had all the children they anticipate, to halt the decline in some of the internatal intervals, should they delay having children much longer. Therefore, while most of the changes in the length of internatal intervals have been in the direction of an *increasing* birth rate, there is the possibility that some of the observed decline in the legitimate fertility rate is a reflection of the "holding-off" by a group of women. The evidence from the survey suggests the possibility that the mean length of the interval between first and second live births will not continue to decrease for the early 1960–1964 cohorts, as it did for the earlier cohorts.

Nevertheless, when asked when they expected to complete their families, women in the later cohorts certainly expected to complete their families younger than those who married earlier, but this is probably a concomitant of younger marriages.

In brief, the survey data indicated that women marrying after 1959 expect to have slightly smaller families than those who married in the 1950s and this expectation is supported by both the more objective prediction of family size based on variables associated with family size and by the use or intended use of more effective methods of contraception by these couples. A part of the decline in the period fertility rate since 1964 may also be attributed to a reduction in the rate at which the lengths of the internatal intervals had been decreasing and particularly to the stabilising of the length of the interval between first and second births.

7.4 THE CONTRIBUTION OF SAMPLE SURVEY DATA TO POPULATION FORECASTING

It is perhaps obvious that data derived from sample surveys based as they are on voluntary co-operation by women are subject to errors that do not affect the official recording of births to the same extent. Certainly the computation of derived statistics such as means based on official registrations are likely to be more precise than comparable statistics derived from sample surveys. The necessarily more expensive data collection methods of sample surveys limit the number of units on whom the measurements can be carried out and this affects the precision of the estimates. It is, for example, unreasonable to quote estimates of mean most likely expected family size to an accuracy greater than one place of decimals.* However, the errors which derive from carrying out measurements on a smaller number of units than the official registration of births entail, are controllable and are relatively small for the size of sample used in the present study. More in question is the effect of the errors introduced by the non-cooperation of certain women designated for the sample. An attempt has been made to assess these errors in Appendix A. Nevertheless, while the effect of these errors does not appear to be important, they do exist and their effect can only be to produce estimates which are less accurate than official registration of demographic variables. Thus it would be foolish to suggest that sample survey data could in any way supersede the official registration of births as a measure of the past or present situation. More questionable would be the projection of the past and present movements in births into the future.

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*See Appendix A.

It is here that one of the major contributions of sample surveys can be made to the techniques of population forecasting. An assessment of people's intentions in certain respects may provide a better measure of future trends than the projection of past situations even when they are augmented by an informed judgement of possible changes. Not that all movements in population are susceptible to measures of intention. For instance, it is unlikely that trends in the rate of illegitimate births could be assessed by statements of intention. On the other hand, intentions on family size, because individuals have views on the subject of size, may be profitably incorporated in forecasts of future trends. To do this most systematically, the measure of ultimate family size which could be employed prior to the completion of a woman's child-bearing years would need to be reviewed by a continuing programme of sample surveys.

The present study used the concept of expected family size as a measure of ultimate family size. Although three measures were compiled on the basis of women's answers to questions about the number of children they expected to have, the measure used most frequently to investigate the changing trends in family size was, for many women, the mean of the maximum and minimum number of children they expected to have. This measure would be validated by a follow-up study which investigated the relationship between this measure and the actual number of children born in the intervening years. Improvements to the measure used in this, the first study might be suggested by any differences found.

A continuous series of studies would, of course, also provide continuous information on likely changes in trends. The present study provides information not only limited to a particular moment in time but also to women married at a particular time—those married before the middle of 1967. The expectations of women married after this date could only be gauged by subsequent surveys.

The other major contribution of sample surveys to the subject of forecasting births in particular, and demography in general, lies in the provision of more complex and detailed information related to the phenomena under study, because there is more scope for the expert collection of information of a sociological nature. Sample surveys because they concentrate on fewer units of measurement can, by the use of trained interviewers, obtain from these individuals more valid and reliable data on a variety of topics associated with family size. In this way can a theory of the determinants of family size be built up. This lack of a comprehensive background within which to set changes in family size has been obvious throughout the study and particularly in the context of checking on women's expected sizes of families with a more objective measure. The present study was concerned only incidentally with the possible determinants of family size and, therefore, the objective predictions of family size were based on a somewhat arbitrary selection of variables apparently associated with family size. There is always the possibility without more direct evidence of causation and in the absence of a compelling theory that the relationship between the individual predictive variables and the dependent variable of family size may be affected by external events and circumstances in an unforeseen way. It is, therefore, essential for the improvement of family size forecasting to collect a body of data which will allow the more authoritative identification of the origins of families of different sizes. It is both in the long-term study of the determinants of family size and in the changes in the short-term trends in family size that sample survey techniques have much to contribute to forecasting.

APPENDIX A

SAMPLE DESIGN* AND SAMPLE ACHIEVED

1. The population

For this investigation the population to be investigated was defined as all married women below the age of 45 years who had been married only once.

2. Sample size

In order to produce estimates of family size of the required precision (confidence limits of 0·1 children with a probability of 0·05) for each marriage cohort, a sample of about 7,500 respondents was planned. In the event, the sample located—7,171 eligible women—was below the anticipated number. This will be considered further in paragraph 6 below.

3. Sampling frame

Since no specific frame exists for selecting the defined population, the Electoral Register was used to select addresses and all the women falling within the defined population at these addresses were included. This would result in a sample marginally less efficient than a simple random sample at the final stage since in a small number of cases more than one eligible woman would be found at an address and the resulting 'cluster' would probably be homogenous.

4. Sampling units

The unit of selection was the address and reference to 1961 Census data suggested that a sample of approximately 21,000 addresses would be required to produce a sample of 7,500 respondents.

5. Sample design

The selection of sampling units was made in three stages for the more populous urban areas and the larger rural areas and in two stages elsewhere. The first stage units were local authority administrative areas.

Before selection, the first stage units were stratified by:

- (i) *Standard region* with the Greater London Council area treated as a separate region.
- (ii) *Type of area* (except the G.L.C.):
  - (a) administrative areas in provincial conurbations
  - (b) urban areas except those in provincial conurbations
  - (c) semi-rural areas—rural districts with a population density of 0·25 or more persons per acre and rural districts contiguous with urban areas with a population of 25,000 or more.

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*The sample was designed by the Government Social Survey's Sampling Branch, under the direction of R. M. Blunden.

(d) truly rural areas—rural districts with a population density below 0·25 persons per acre and not contiguous with urban areas of 25,000 or more.

(iii) *Economic indicator:* The proportion (by value) of domestic hereditaments with a rateable value over £100. For the G.L.C. area the proportion considered was that of domestic hereditaments of over £200.

200 first stage units were selected with a probability proportionate to the general population (and not necessarily to the defined population) in the local authority areas.

For urban areas with a population below 100,000, sampling units were selected from the whole of the administrative area from the 1967/68 electoral register.

For larger urban areas, an intermediate selection was made of four wards with a probability of selection proportionate to their population. Similarly, for rural areas groups of contiguous parishes giving a total population of approximately 1,000–5,000 and of not more than 40,000 acres were considered as single units and one such unit was selected at an intermediate stage for each first stage selection. At the final stage, addresses were again selected from the 1967/68 electoral register.

Equal numbers of addresses were selected for each sampling point. This together with the initial selection of units with a probability approximately proportionate to the number of addresses in each area resulted in each address having an equal probability of selection. All married women within the defined age groups living at selected addresses were to be accounted for; this would result in a probability sample of the defined population.

6. The result of the sampling operation

The results of selecting married women under 45 years of age in this way are given in Table A.1.

TABLE A.1

Results of the sampling operation

	Addresses No.	Married Women	
		No.	%
Sample set	20,800		
No information	52		
Demolished, holiday accommodation	619		
Contained no married women	4,541		
No information on married women	38		
Contained married women	15,550	16,239	
Aged 45 years or above or age not established		8,785	
Married previously or not established		283	
Women eligible for interview (Number established)		7,171	100·0
Interviewed fully		6,248	87·9*
Interviewed partially		58	
Non-contacts		84	1·2
Refusals		781	10·9

*The effective response rate was between 77% and 82% due to the deficiency in the total number of women contacted.

The 20,800 addresses selected contained 16,239 married women of whom 7,454 were said to be under 45 years of age and 7.171 of these had not been married previously. That is, 7,171 women were established as being eligible for interview and of these approximately 88 % were interviewed.

However, the number established as being eligible for interview was well below the number expected from 20,800 addresses. Data based on the 1961 Census and illustrated in Table A.2 suggest that the 20,800 addresses selected should have yielded between 8,000 and 8,500 married women under 45 years of age rather than the 7,454 established.

TABLE A.2

Sample achieved compared with expected sample

Addresses set: 20,800
Addresses containing married women: 20,091

	Sample expected*			Sample achieved	
	Maximum number	Minimum number	%	Number	%
Married women	16,500	15,600	100·0	16,239	100·0
Married women 45 yrs. and over	8,000	7,600	48·7	8,785	54·1
Married women under 45 years	8,500	8,000	51·3	7,454	45·9

*The number of women expected from the given number of addresses assumes:

(a) that addresses from the Electoral Register and households from the census are synonymous. In fact, there are more households than "addresses" in England and Wales. Consequently the numbers expected above are underestimates.

(b) that there is approximately one married woman per 1·22–1·29 households.

(c) that there is approximately one married woman under 45 years per 2·36–2·47 households

The source of these assumptions is the 1961 census:

Age, Marital Status and General Condition Tables	Table 8
Household Composition Tables	Table 1
Fertility Tables	Table 1

It is possible that data derived from the 1961 Census were no longer pertinent in 1967, but it seems unlikely that differences in the relationship between households and married women between the two years should account for the entire deficiency in married women under 45 years of age. Rather, it seems from the difference in the age distribution of the expected and achieved sample that a disproportionately large number of the married women located claimed to be or were recorded as being 45 years or older and thus outside the defined population. The total number of married women located was of an order expected from the number of addresses set, but the number of married women under 45 was disproportionately small.

When this deficiency began to emerge during the field work period, a check was made on two particularly bad areas by very experienced interviewers. Their findings confirmed those of the previous interviewers and produced no evidence of any short-fall in numbers, let alone any causes for the deficiency. It is, therefore, extremely difficult to account for the difference between the number of married women under 45 located and the number expected. It does suggest that an alternative technique for selecting married women might yield improved results by reducing what appears to be a bias in the sample selection. Two possibilities suggest themselves: either the selection of *named* women from the Electoral Register, making alternative arrangements for those too young to register or the listing for each of the 20,800 addresses of *all* women living there, together with their ages, so that closer contact may be made with them. Neither method is necessarily fool-proof and the second is also very time-consuming and expensive, but one or other of them is likely to reduce the deficiency in the number of eligible women located by identifying the individual women eligible for the sample.

Table A.2 also suggests that the size of the deficiency is some 500–1,000 women. The omission of these women together with the group of known non-respondents means that the effective response rate for the survey lies between 77% and 82%. The result of the omission and the non-response is both a reduction in numbers and a possible bias in the sample in that the loss disproportionately affects some groups more than others.

The reduction in numbers will, of course, affect the precision of the estimates—that is, the precision of the estimates in the study will be lower than that which might have resulted if the sample set had been achieved. In that sense, the effects of including the omitted women can only be to improve the precision of the estimates for various sub-groups. For that reason, an assessment of the biasing effects of the omission are probably of greater importance than the effects on the precision of the estimates. Both, however, will be considered in the following paragraphs.

7. Sampling precision

The sampling precision of individual *percentages* can be assessed from the following table which assumes selection of units by simple random sampling. It can be stated with 68% confidence that the population value will be contained within the interval "sample estimate ± one standard error" and with 95% confidence that it will be between the values "sample estimate ± twice the standard error". The effects of multi-stage sampling are probably taken into account if the values derived from using the estimate based on simple random sampling are multiplied by 1·5. This of course produces only a guide to the size of the sampling error.

TABLE A.3

Standard error of estimated percentages based upon various sample sizes and assuming simple random sampling

Estimated percentage	Sample size									
	100	250	500	750	1000	1500	2000	3000	5000	6000
					percentages					
2 or 98	±1·40	±0·89	±0·63	±0·51	±0·44	±0·36	±0·31	±0·26	±0·20	±0·18
5 or 95	±2·18	±1·38	±0·97	±0·80	±0·70	±0·56	±0·49	±0·40	±0·31	±0·28
10 or 90	±3·00	±1·90	±1·34	±1·09	±0·95	±0·77	±0·67	±0·55	±0·42	±0·39
25 or 75	±4·33	±2·74	±1·94	±1·58	±1·37	±1·11	±0·97	±0·79	±0·61	±0·56
50	±5·00	±3·33	±2·24	±1·83	±1·58	±1·29	±1·12	±0·91	±0·71	±0·65

As a guide to the precision of the estimates of *differences between two percentages*, reference should be made to "Standard Errors for Percentages" by Alan Stuart, (Applied Statistics, 12.1963).

The sampling precision of the data for the major part of this study—the estimates of mean family size—is much more difficult to summarise, since the precision of each estimate is a function not only of the size of the sample but also of the estimate's variability. As a guide to the order of the size of the sampling errors, Table A.4 gives the size of the sampling errors which attach to the estimates of mean most likely expected family size, analysed by date of marriage and wife's age at marriage. Again, simple random sampling is assumed and the effects of multi-stage sampling are likely to be an increase in sampling error of about 1·5 times.

TABLE A.4

Standard error of estimates of mean most likely family size assuming simple random sampling

Date of marriage	Wife's age at marriage	(Effective) Sample size (married women)	Mean most likely expected family size (children)	Variance (children)	Standard deviation (children)	Standard error (children)
All dates	All ages	6,192	2·58	1·73	1·32	0·02
	Under 20	1,759	2·91	1·85	1·36	0·03
	20–24	3,536	2·53	1·60	1·26	0·02
	25–29	741	2·23	1·53	1·24	0·05
	30 or over	149	1·58	1·53	1·24	0·10
Before 1945	All ages	192	2·74	2·80	1·67	0·12
	Under 20	131	2·64	2·51	1·58	0·14
	20–24	61	2·97	3·40	1·84	0·24
	25–29	—	—	—	—	—
	30 or over	—	—	—	—	—
1945–49	All ages	949	2·54	2·69	1·64	0·05
	Under 20	223	3·17	3·36	1·83	0·12
	20–24	683	2·34	2·34	1·53	0·06
	25–29	43	2·47	2·06	1·44	0·22
	30 or over	—	—	—	—	—
1950–54	All ages	1,352	2·65	2·44	1·56	0·04
	Under 20	318	3·27	2·71	1·65	0·09
	20–24	816	2·58	2·22	1·49	0·05
	25–29	210	2·00	1·89	1·38	0·08
	30 or over	7	1·71	1·57	1·25	0·47
1955–59	All ages	1,464	2·66	1·55	1·24	0·03
	Under 20	376	3·07	1·61	1·27	0·07
	20–24	820	2·62	1·35	1·16	0·04
	25–29	225	2·25	1·54	1·24	0·08
	30 or over	42	1·93	2·07	1·44	0·22
1960–64	All ages	1,536	2·49	0·95	0·98	0·03
	Under 20	495	2·66	0·84	0·92	0·04
	20–24	783	2·51	0·84	0·92	0·03
	25–29	185	2·37	1·08	1·04	0·08
	30 or over	73	1·38	1·24	1·11	0·13
1965 or later	All ages	695	2·48	0·78	0·88	0·03
	Under 20	216	2·52	0·74	0·86	0·06
	20–24	373	2·55	0·60	0·77	0·04
	25–29	78	2·35	1·19	1·09	0·12
	30 or over	27	1·52	1·34	1·16	0·22

Assuming simple random sampling, the probability is 95 per cent that the population value for mean most likely expected family size for all eligible married women lies between the limits

2·58 ± 2 × 0·02 children

i.e. between 2·54 (2·5) and 2·62 (2·6) children.

Incorporating an approximate measure for the probable effects of multi-stage sampling results in an interval estimate between 2·52 (2·5) and 2·64 (2·6) children.

At the opposite range of standard errors, a similar interval estimate for mean most likely expected family size for women married between 25 and 29 years of age in 1965 or later would be 2·11 (2·1) and 2·59 (2·6) children assuming simple random sampling and 1·99 (2·0) and 2·71 (2·7) children incorporating the design factor.

8. Sample bias

The extent to which the omissions together with the known non-respondents are likely to bias the findings needs to be investigated. The characteristics of all married women (preferably married once only) under the age of 45 years need to be compared to the characteristics of the responding sample and the effects of the differences on the findings of the study assessed.

Official data available for comparing the characteristics of the sample with those of the defined population are sparse and, also, subject to minor differences of time and definition. For example, most of the official data include women married more than once. Nevertheless, Table A.5 suggests some differences between the responding sample and all married women under 45 years of age.

TABLE A.5

(1) Age distribution of responding sample compared with expected sample

Age last birthday	Sample expected†	Responding sample		Percent difference
	%	No.	%	%
Under 20 years	2·1	96	1·5	−37·5
20–24	16·0	972	15·4	− 3·8
25–29	19·8	1,290	20·5	+ 3·2
30–34	19·9	1,315	20·9	+ 4·4
35–39	20·6	1,414	22·4	+ 8·1
40–44	21·6	1,217	19·3	−11·9
No answer		2		
All under 45 years	100·0	6,306	100·0	

†Source: Registrar General's Quarterly return for quarter ending June 1967. Appendix F.

(2) Husband's socio-economic group distribution of responding sample compared with expected sample

Husband's S.E.G.	Classification of Occupation group number	Sample expected†	Responding sample		Percent difference
		%	No.	%	%
Managerial	1–4, 13	17·3	1,111	17·6	+ 1·6
Non-manual	5–7, 12	20·6	1,251	19·8	− 3·9
Skilled manual	8, 9	37·8	2,544	40·3	+ 6·2
Other manual	10, 11, 14–17	24·2	1,355	21·5	−12·7
No answer		—	45	0·7	
All couples with wives under 45 years		100·0	6,306	100·0	

†Source: Sample Census 1966, Household Composition Tables, Table 26.

The responding sample appears to under-represent particularly the condition and opinions of those aged under 20 at the time of the investigation (that is, those married young more recently), those aged between 40 and 44 years and those whose husbands were in non-skilled manual occupations*. There is also evidence to suggest that the responding sample under-represents women born overseas. However, since these women constitute a very small proportion of the total population of married women and since analyses by country of birth were not incorporated in this report, the effects of this under-representation are not considered further.

One further possible discrepancy needs to be considered in assessing the conclusions. Estimates of mean family size for the different cohorts derived from this study differ from those obtained from official sources.

TABLE A.6

Mean family size in 1967

Year of marriage	Age at marriage							
	Under 45		Under 20		20–24		25–29	
	A	B	A	B	A	B	A	B
1950–54	2·17	2·36	2·88	2·84	2·22	2·31	1·89	1·85
1955–59	2·05	2·18	2·45	2·55	2·04	2·13	1·91	1·83
1960–64	1·43	1·49	1·68	1·74	1·38	1·43	1·35	1·34
1965–67	0·37	0·43	0·48	0·60	0·31	0·35	0·34	0·40

A—Derived from the Registrar General's Statistical Review Part II Table QQ(b) based on official registrations.

B—Family Intentions Survey. Data on number of live-born children.

The official data need themselves to be treated circumspectly since the basis for the figures is currently under review. Nevertheless, the survey data do appear to over-estimate the mean size of family for most sub-groups. The exceptions are those who married between 25 and 29 years of age. It may be that the refusals and non-contacts were more frequently from those who were married young and had no or few children.

9. Effects of the sample bias

The effects of the bias need to be assessed in relation to the population as a whole and also in relation to pertinent sub-groups. For each category its effects on (1) most likely expected family size and (2) contraceptive use will be considered. The effect on predicted family size is likely to be small since these estimates were confined to those married between the ages of 20 and 24. The pre-1960 marriage cohorts for whom estimates of predicted family size were made will, however, exclude a small number of women aged 40 and 41 who married at 23 or 24 years of age. It is unlikely that these very few omissions will affect the estimates to any measurable degree.

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*Jean Atkinson of the Social Survey Fieldwork Branch makes the point that the under-representation of "other manuals" possibly occurs because of the over-reporting of skilled manuals. This occurs "in taking data as we did secondhand i.e. from the housewives, some of whom are likely to have upgraded their husbands' jobs".

Total population estimates

(1) *Most likely expected family size*

Since married women under the age of 20 years of age constitute only a small proportion of married women under 45, the omission of about a third of these women (less than 1% of all married women under 45) is unlikely to affect the population estimates. Nevertheless, to assess the effect on the mean most likely family size of 2·6, the estimates for each "age last birthday" group have been reweighted in the ratio in which these groups appear in the expected rather than the responding sample. This assumes, of course, that those within each "age last birthday" category who did not reply were similar to those who did. The effect of reweighting is very small. To one place of decimals, mean most likely expected family size remains at 2·6. To two places of decimals, the mean falls from 2·59 to 2·57. If we assume that the omitted women differed markedly from the respondents in their age group with respect to most likely expected family size, we can again assess the effect on the mean. More specifically, if we assume that the omitted married women under the age of 20 years expected a family of mean size comparable to those aged between 40 and 44 years while those aged between 40 and 44 omitted expected a family of mean size the same as those aged under 20 then, again, the sample mean would remain at 2·6 (2·58) as a result of reweighting the sample.

Similarly, reweighting by the S.E.G. distribution of the expected sample results in an estimate of 2·6 (2·58) for mean most likely expected family size. That is, reweighting to give increased emphasis to the under represented non-skilled manual group is unlikely to affect the population estimate to an important extent, assuming that the excluded women were similar to those who had participated in the survey. Even if we make the opposite assumption and suppose that the omitted women with husbands in non-skilled manual occupations expect to have families no larger (on average) than, say, those with husbands in non-manual occupations, the effect on the population estimate would be negligible—a mean of 2·6 children would result.

These findings are summarised in Table A.7.

TABLE A.7

Effects on mean most likely expected family size of re-weighting for non-response

	Mean most likely expected family size	
Responding sample	2·6	(2·59)
Expected sample assuming non-respondents are similar to respondents within each age group	2·6	(2·57)
Expected sample assuming non-respondents in youngest and oldest groups differ markedly from respondents in their age groups	2·6	(2·58)
Expected sample assuming non-respondents are similar to respondents within each S.E.G. group	2·6	(2·58)
Expected sample assuming non-respondents in non-skilled manual occupations expect families comparable in size to non-manual respondents	2·6	(2·57)

(2) *Contraceptive use* (*Summary* 18)

The result of reweighting summary 18 (which describes the current use of family planning) to conform to the expected distribution of age last birthday and husband's S.E.G. is to increase the proportion of those who say they have never used any method of contraception from 9·4% of all eligible married women to 9·5%, for both distributions. The proportion of those who are using less reliable methods of contraception "at present" increases from 24·7% to 24·9% when the data are reweighted by the expected distribution of husband's socio-economic group but remains at 24·7% when reweighted by "age last birthday". Again the assumption of similarity between those excluded and included in the sub-groups is made. If the contrary assumption is made e.g. that those omitted from the non-skilled manual groups had the characteristics of the managerial group, the effect would be to reduce the proportion using less reliable methods of contraception from 24·7% to 24·6%.

Hence, as far as the population estimates are concerned, the biasing effects of the responding sample are likely to be small and unlikely to affect the general conclusion.

Estimates for sub-groups

(1) *Most likely expected family size*

One group to be affected by the omission of women aged under 20 years is that consisting of women married under 20 years of age in the more recent cohorts. Since this group is important for the general conclusions relating to changes in expected family size for the various marriage cohorts, the effect of the omitted women needs to be considered.

If it is assumed that, at one extreme, the women excluded were no different in their expectations than the under 20s included, then their exclusion would have no effect on the findings. If, on the other hand, it is assumed that they are very different and take up one or other of extreme positions, we need to look at the possible consequences.

To simplify the interpretation, we need to postulate that all the excluded women under 20 years of age were married in 1965 or later. (It is possible that some married between 1960 and 1964.) If (a) these women expected to have, on average, *one* child, then the mean computed from the responding sample (2·5) would fall to 2·0 and it could be concluded that the decline in expected family size evinced by those married under 20 years of age in 1960–1964 would continue for the later cohort, or (b) they expected to have on average *four* children, then the computed mean would rise to 2·9 children and the general conclusion of a mean expected family size for this group stabilised at a level below that of similar women married in the 1950s would no longer hold.

However, the main reason for the exclusion of the women under 20 years of age was an inability to locate or contact them and since the greater the activity outside the homes the smaller the family, it seems reasonable to assume that the omitted women would have smaller rather than larger families. Only if the omitted women expected on average a family of three or more children (compared with the respondents' average of 2·5) would the general conclusion of a smaller mean expected size of family for those married young more recently be negated.

(2) *Contraceptive use* (*Summary* 19)

The effect on summary 19, which describes the informants' intention with respect to the use of contraceptives, is considered since, for women married under 20 years of age in 1965 or later, it is their *future use* of family planning which will give credence to their family size expectations. The data from the responding sample suggest that proportionately fewer of those recently married (compared with marriages in the 1950s) intend to use the less reliable methods of contraception. What will be the effect on this general conclusion if the omitted women *all* intended to use less reliable methods of family planning? This would increase the proportion of intending users of the *less* reliable methods of contraception (of those married under 20 years of age in 1965 or later) from 14% derived from the responding sample to 41% (see Table 4.26). This would lead, of course, to a reversal of the general conclusion of a decline in the future use of the less reliable methods of contraception. On the other hand, if *all* the omitted women intended to use the reliable methods of contraception, the proportion intending to use the *less* reliable would fall to 10%. In fact, the proportion of the omitted women who would need to choose the less reliable methods for future use in order to raise the overall proportion of less reliable users to a level comparable to those married in the 1950s would be about 33%—compared with a proportion of 12%–14% for the responding sample married after 1959 and 20%–23% for those married in the 1950s. It seems unlikely that the omitted women would differ from the respondents to the extent that more than twice as many of them, proportionately, intended to use the less reliable methods of contraception.

10. Summary of the effects of the sample bias

It is impossible to be dogmatic about the effects on the findings of the non-respondents. The examples given suggest that the effect of the omissions on the estimates for the total population are likely to be very small and unlikely to affect the general conclusions. Their effect on the sub-groups, particularly on the group who married under 20 years of age most recently, is more problematical. All that can be said, again citing the examples, is that the omitted group would have to have characteristics considerably different from the responding group in order to affect the general conclusions.

APPENDIX B

BASE NUMBERS FOR TABLES

(The tables for which these numbers are the bases are listed under each classification)

N.B. Sub-groups do not necessarily add to the totals because "no answer", "unclassifiable" and "not applicable" categories have been omitted

Number of married women

Date of marriage	Wife's age at marriage				
	All ages	Under 20	20–24	25–29	30 or over
All dates	6306	1782	3600	760	157
Before 1945	193	132	61	—	—
45–49	968	227	696	45	—
50–54	1370	321	826	215	7
55–59	1501	384	839	232	45
60–64	1564	501	799	188	76
65 or later	706	217	379	80	29

[Tables 2.2, 2.3, 2.6 (all age column), 2.8, 2.9, 2.10, 2.11, 3.1 (all age column), 3.9]

Wife's current age	Husband's socio-economic group			
	Managerial	Other non-manual	Skilled manual	Other manual
All ages				
Under 20	6	13	47	28
20–24	94	188	433	230
25–29	204	265	508	294
30–34	254	234	555	241
35–39	280	273	516	307
40–44	248	254	449	231

[Table 2.4]

Date of marriage	Husband's socio-economic group			
	Managerial	Non-manual	Skilled manual	Other manual
Before 1945	26	31	90	44
45–49	193	193	370	208
50–54	267	250	553	292
55–59	282	292	612	308
60–64	243	313	636	258
65 or later	100	170	285	144

[Tables 2.15, 3.11]

Those who have living children

Date of marriage	
All dates	5,220
Before 1945	185
45–49	883
50–54	1,445
55–59	1,361
60–64	1,274
65 or later	271

[Table 2.7]

Date of marriage	Number of living children					
	All groups	0	1	2	3	4 or more
All dates	6,306	1,089	1,476	2,084	962	698
Before 1945	193	8	29	66	45	45
45–49	968	85	192	331	167	193
50–54	1,370	125	240	471	280	254
55–59	1,501	140	268	612	302	179
60–64	1,564	290	500	579	168	27
65 or later	706	435	246	25	—	—

[Table 2.12]

Date of marriage	Religion						
	All groups	Husband & Wife Christian, not Catholic	Wife: Catholic Husband: Other Christian	Husband: Catholic Wife: Other Christian	Husband & Wife Catholic	Husband & Wife non-Christian	Others
All dates	6,306	4,601	280	280	468	397	280
Before 1945	193	155	9	7	9	6	7
45–49	968	742	46	30	62	47	41
50–54	1,370	1,047	53	53	104	67	46
55–59	1,501	1,103	57	72	123	87	59
60–64	1,564	1,080	86	78	114	129	77
65 or later	706	473	28	40	56	61	48

[Tables 2.13, 3.11, 3.15]

Date of marriage	Age completed full-time education							
	Husband: Under 15 years				Husband: 15 years		Husband: 16 or over	
	All groups	Wife: Under 15 years	Wife: 15 years	Wife: 16 or over	15 or Under 15 years	Wife: 16 or over	15 or Under 15 years	Wife: 16 or over
All dates	6,306	1,542	444	217	1,845	422	645	972
Before 1945	193	139	9	8	11	3	14	6
45–49	968	580	49	42	77	20	98	80
50–54	1,370	612	153	85	146	48	126	159
55–59	1,464	151	150	43	575	107	136	250
60–64	1,564	43	55	35	712	153	188	311
65 or later	706	11	21	3	312	87	80	163

[Tables 2.14, 3.11, 3.15]

Date of marriage	Length of time in paid employment			
	All groups	Worked least† relative to length of marriage	Worked about half† of married life	Worked more than half† of married life
All dates	6,306	3,825	962	1,454
Before 1945	193	84	35	72
45–49	968	514	186	255
50–54	1,370	785	288	280
55–59	1,464	926	318	240
60–64	1,564	937	135	484
65 or later	706	579	—	123

†defined at foot of table 2.16
[Table 2.16]

Number of living children	Husband's socio-economic group			
	Managerial	Non-manual	Skilled manual	Manual
0	192	281	418	180
1	216	293	635	324
2	453	388	803	429
3	161	199	387	209
4	89†	90†	173	125
5 or more			128	88

†4 or more
[Tables 2.20, 3.15]

Date of marriage	Most likely expected number of children			
	1	2	3	4 or more
Before 1945	28	64	49	44
45–49	179	297	193	213
50–54	199	434	301	336
55–59	144	495	432	333
60–64	129	602	568	187
65 or later	40	297	284	55

[Table 3.10]

Date of marriage	Past use of family planning				
	All pregnancies occurred before use of family planning	All before or planned	All unplanned	Both planned and unplanned	All planned
Before 1945	21	9	42	17	34
45–49	138	66	166	148	148
50–54	152	89	249	200	288
55–59	172	115	266	231	353
60–64	205	135	247	172	358
65 or later	95	10	100	10	86

[Table 3.17]

Date of marriage	Future use of family planning					
	Uses reliable method and will continue	Uses reliable method and will *not* continue	Uses less reliable and will continue with reliable	Uses less reliable and will continue with less	Never used family planning but intends to	Never used family planning and doesn't know intention
Before 1945	62	4	11	61	1	18
45–49	385	22	39	298	8	73
50–54	650	29	83	317	26	93
55–59	830	46	126	277	41	68
60–64	914	46	156	230	75	67
65 or later	403	15	70	83	75	45

[Table 3.18]

Date of marriage	Future fecundity					
	All groups	Definitely sterile	Probably sterile	Sub-fecund	Fecund with past difficulties	Fecund
All dates	6,306	270	508	553	903	3,946
Before 1945	193	24	22	13	30	98
45–49	968	86	103	90	165	507
50–54	1,370	89	131	136	257	719
55–59	1,501	42	128	148	254	897
60–64	1,564	27	106	137	174	1,095
65 or later	706	2	18	28	23	629

[Tables 4.2, 4.3, 4.5]

Age last birthday	Future fecundity					
	All groups	Definitely sterile	Probably sterile	Sub-fecund	Fecund with past difficulties	Fecund
All ages	6,306	270	508	553	903	3,946
Under 20	96	—	1	4	5	82
20–24	972	8	43	45	63	797
25–29	1,290	22	76	106	174	889
30–34	1,315	44	110	130	211	796
35–39	1,414	76	136	144	257	770
40–44	1,217	120	142	123	193	612

[Table 4.4]

Date of marriage	Future fecundity					
	All groups	Definitely sterile	Probably sterile	Sub-fecund	Fecund with past difficulties	Fecund
All dates	6,306	270	508	553	903	3,946
Before 1945	193	24	22	13	30	98
45–49	968	86	103	90	165	507
50–54	1,370	89	131	136	257	719
55–59	1,501	42	128	148	254	897
60–64	1,564	27	106	137	174	1,095
65 or later	706	2	18	28	23	629

[Tables 4.2, 4.3, 4.5]

APPENDIX C

DEFINITIONS

Main Summary Codes

Summary

1. *Total number of pregnancies* (one multiple birth=one pregnancy)

2. *Total number of children live-born*

3. *Total number of children live-born* to informant and *still living* at the time of the interview

4. *Duration of marriage*

   Assuming all dates refer to the middle of the month, subtract date of marriage from date of interview.

5. *Date of marriage.* Grouped:
   Before 1945
   1945–49
   1950–54
   1955–59
   1960–65
   1965 or later (to date of fieldwork)

   These are the date-of-marriage *cohorts* referred to throughout the report.

6. *Age at marriage* (*Wife*). Grouped:
   Under 20
   20–24
   25–29
   30 or older

7. *Age at marriage* (*Husband*). Grouped:
   Under 20
   20–24
   25–29
   30 or older

8. *Age at last birthday* (*Wife*). Grouped:
   Under 20
   20–24
   25–29
   30–34
   35–39
   40–44

9. *Birth intervals*

   (a) Number of months between marriage and 1st live-born
   (b) Number of months between 1st and 2nd live-born
   (c) Number of months between 2nd and 3rd live-born
   (d) Number of months between 3rd and 4th live-born

   Expressed as proportion of a year

   For those pregnant for the first time, an estimate of the interval marriage to 1st live-born is included.

10. *Pregnancy intervals*

    (a) Number of months between marriage and 1st pregnancy outcome
    (b) Number of months between 1st and 2nd pregnancy outcomes
    (c) Number of months between 2nd and 3rd pregnancy outcomes
    (d) Number of months between 3rd and 4th pregnancy outcomes

    Expressed as proportion of a year

11. *Year of last live-born birth*

12. *Pregnancy status of women*

    Never pregnant and is not at the time of interview
    Present pregnancy is first
    Has been pregnant previously and is not now
    Has been pregnant previously and is pregnant now

13. *Future fecundity:*

Definitely sterile:	(i) Those women who had experienced the menopause, had had a hysterectomy or other sterilizing operation or whose husband had had a sterilising operation. (ii) Those women who said that their doctor had said that they had no chance of having a child or that their husband had no chance of fathering a child.
Probably sterile or unlikely to have children because of related physical difficulties:	(i) Those women who said that coitus was difficult or painful. (ii) Those women who had injury or illness which made child-bearing dangerous to health. (iii) Those women whose doctor advised against it, or were fairly sure or uncertain about the informant's ability to have children. (vi) Those women who said that child-bearing was "difficult" because of a danger/history of miscarriages/still-births/toxaemia, because of the risk of a difficult birth or because some illness/disability would be aggravated by a pregnancy.

GUIDE SHEET (for summary 14)

Number of possible pregnancies if fecundity were not limited

Age Now	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
16																												
17																												
18	1																											
19	1	1																										
20	2	1	1																									
21	2	2	1	1																								
22	3	2	2	1	1																							
23	3	3	2	2	1	1																						
24	4	3	3	2	2	1	1																					
25	4	4	3	3	2	2	1	1																				
26	4	4	4	3	3	2	2	1	1																			
27	5	4	4	4	3	3	2	2	1	1																		
28	5	5	4	4	4	3	3	2	2	1	1																	
29	5	5	5	4	4	4	3	3	2	2	1	1																
30	6	5	5	5	4	4	4	3	3	2	2	1	1															
31	6	6	5	5	5	4	4	4	3	3	2	2	1	1														
32	6	6	6	5	5	5	4	4	4	3	3	2	2	1	1													
33	7	6	6	6	5	5	5	4	4	4	3	3	2	2	1	1												
34	7	7	6	6	6	5	5	5	4	4	4	3	3	2	2	1	1											
35	7	7	7	6	6	6	5	5	5	4	4	4	3	3	2	2	1	1										
36	8	7	7	7	6	6	6	5	5	5	4	4	4	3	3	2	2	1	1									
37	8	8	7	7	7	6	6	6	5	5	5	4	4	4	3	3	2	2	1	1								
38	8	8	8	7	7	7	6	6	6	5	5	5	4	4	4	3	3	2	2	1	1							
39	9	8	8	8	7	7	7	6	6	6	5	5	5	4	4	4	3	3	2	2	1	1						
40	9	9	8	8	8	7	7	7	6	6	6	5	5	5	4	4	4	3	3	2	2	1	1					
41	9	9	9	8	8	8	7	7	7	6	6	6	5	5	5	4	4	4	3	3	2	2	1	1				
42	10	9	9	9	8	8	8	7	7	7	6	6	6	5	5	5	4	4	4	3	3	2	2	1	1			
43	10	10	9	9	9	8	8	8	7	7	7	6	6	6	5	5	5	4	4	4	3	3	2	2	1	1		
44	10	10	10	9	9	9	8	8	8	7	7	7	6	6	6	5	5	5	4	4	4	3	3	2	2	1	1	
45	11	10	10	10	9	9	9	8	8	8	7	7	7	6	6	6	5	5	5	4	4	4	3	3	2	2	1	1

13. (continued)

Subfecund:	(i) Those women who have difficulty in conceiving. (ii) Those whose last use of family planning was in 1965 and have since had no pregnancy. (iii) Those whose last use of family planning was between 1958 and 1964 and whose total pregnancies were fewer than the number to be expected from unlimited fertility (Summary 14).
Fecund but with past difficulties:	(i) Those women unaware of any present limitation to fecundity but who say they experienced such difficulties in the past. (ii) Those women who said that they had experienced periods of at least two years duration in their marriage in which they had *not* used family planning and had not become pregnant.
Fecund:	Those women unaware of any physical difficulties in having children either in the past or at present.

14. *Number of possible pregnancies if fecundity were not limited*

15. *Minimum number of children expected in total*
    - (a) Those women who said it was "impossible" to have any more children: the number of children still living at the time of the interview.
    - (b) Those women who said it was "difficult" for them to have any more children: the number of children still living at the time of the interview.
    - (c) Remainder of women:
        - (i) Those who may have more children: the smallest number of children they expect to have altogether.
        - (ii) Those who probably/definitely will not have any more children: the number of children still living at the time of the interview.

In all cases where the woman was pregnant at the time of the interview, one was added to the number above.

15a. *Minimum number expects in future*

Number in Summary 15 minus number in Summary 3.

16. *Maximum number of children expected in total*
    - (a) Those women who said it was "impossible" to have any more children:

16. (continued)

    - (i) Those who said they might have more "if something happens so that you can have a child": the number they expect to have altogether.
    - (ii) Those who said they would not have more: the number of children still living at the time of the interview.
- (b) Those women who said it was "difficult" for them to have any more children:
    - (i) Those who expect to have or were uncertain about having more children: the largest number of children they expected to have altogether.
    - (ii) Those who did not expect to have any more children: the number of children still living at the time of the interview.
- (c) Remainder of women:
    - (i) Those who expect to have or were uncertain about having more children: the largest number of children they expected to have altogether.
    - (ii) Those who would probably/definitely not have any more children: the largest number they might have if circumstances changed or the number of children still living at the time of the interview.

In those cases where the appropriate number was the number of children still living at the time of the interview, one was added if the respondent was pregnant.

16a. *Maximum number expects in future*

Number in Summary 16 minus number in Summary 3.

17. *Most likely number of children expected in total*

- (a) Those women who said it was "impossible" to have any more children: the number of children still living at the time of the interview. One was added if informant was pregnant at the time of the interview.
- (b) Those women who said it was "difficult" for them to have any more children:
    - (i) Those who expect more: the number of children they expect altogether.
    - (ii) Remainder: mean of minimum and maximum numbers in summaries 15 and 16.
- (c) Remainder of women
    - (i) Those who expect more children and were "very sure" about the number they expect altogether: This number
    - (ii) Remainder: mean of minimum and maximum numbers in summaries 15 and 16.

17a. *Most likely number expects in future*

Number in Summary 17 minus number in Summary 3.

17b. *Number expected in "next five years"*

- (a) Those women who said it was "impossible" to have any more children:
  - (i) Those pregnant at the time of the interview: one
  - (ii) Remainder: zero
- (b) Remainder of women
  - (i) If question answered specifically: the number of children born between date of interview and summer 1972.
  - (ii) If question not answered specifically but expects to complete family by 1972: the number of children expected to be born in the future.
  - (iii) If question not answered specifically and expects to complete family in 1973 or later or does not know when: number unspecified.

18. *Use of family planning*

Uses "reliable" methods at present:	Those couples who were using the sheath, the loop, the cap with a spermicide, aerosol foam or the contraceptive pill at the time of the interview.
Uses "less reliable" methods at present:	Those couples who were using a cap without a spermicide, a spermicide without a cap, suppositories, pessaries, jelly tablets, foam tablets, the safe period, withdrawal by the husband, douching or abstinence (undefined) at the time of the interview.
Wants baby/is pregnant and used "reliable" methods in past:	Those who are preganant or do not use contraceptives at the time of interview because they want/do not mind a baby but previously used "reliable" (as above) methods of contraception.
Wants baby/is pregnant and used "less reliable" methods in past:	As previous category but last used "less reliable" methods of contraception.
Other reasons for not using contraception at present but used "reliable" methods in past:	Self explanatory.
Other reasons for not using contraceptive at present but used "less reliable" methods in past:	Self explanatory.

Never used any method of family planning.

N.B. "Reliable" methods take precedence over "less reliable" methods where both mentioned.

19. *Future use of family planning*

Uses/has used "reliable" method and will continue with these methods.

Uses/has used "reliable" method and will not continue with "reliable" method.

Uses/has used "less reliable" method and will continue with "reliable" method.

Uses/has used "less reliable" methods and will continue with these methods or none at all.

Has never used family planning and intends to use a "reliable" method.

Has never used family planning and intends to use a "less reliable" method.

Has never used family planning and D.K. methods intends to use or does not intend to use a method.

20. *Past use of family planning*

Never pregnant and uses family planning at present.

Never pregnant and does not use family planning at present.

All pregnancies occurred before using a method.

All pregnancies occurred before using a method or planned.

All pregnancies occurred without deliberate planning.

Pregnancies occurred both planned and unplanned.

All pregnancies deliberately planned.

21. *Complete/Incomplete families*

- (a) Definitely sterile
    - (i) Those classified as "definitely sterile" in summary 13.
    - (ii) Those married in 1959 or earlier with no living child and expecting no children in the future.
- (b) Families completed
    - (i) Those expecting no children in the future and last child born in 1962 or earlier.
    - (ii) Those expecting no children in the future, last child born in 1963 or later and uses reliable methods of contraception and will continue with them.
    - (iii) Those expecting no children in the future, no living child, married in 1960 or later and uses reliable methods of contraception and will continue with them.
- (c) Families incomplete
    - (i) Those expecting one or more children in the future.
    - (ii) Those expecting no children in the future, no living children, married in 1960 or later and uses or intends to use other than reliable methods of contraception.
    - (iii) Those expecting no children in the future, last child born in 1963 or later and uses or intends to use other than reliable methods of contraception.

22. *Number of live-born and still alive births which took place within the first five years of marriage.*

23. *Number of live-born and still alive births which took place within the first ten years of marriage.*

24. For completed families: *The difference between ideal and actual number of children.*

25. For completed families: *The difference between the numbers expected at marriage and the actual number of children.*

26. *Number of pregnancies before the first use of contraception.*

27. For incomplete families: *The difference between the ideal and most likely expected number of children.*

28. For incomplete families: *The difference between the numbers expected at marriage and the most likely expected number of children.*

29. *Length of time worked since marriage*

Married 1962–1967 *and*
Has *not* worked since marriage/worked one year or less (regardless of whether working now or not)*
Has worked 2–3 years*
Has worked 4 years or more

Married 1957–1964 *and*
Has *not* worked since marriage/worked 3 or fewer years
Has worked 4–6 years*
Has worked 7–8 years*
Has worked more than 8 years*

Married 1952–1956 *and*
Has *not* worked since marriage/worked 4 or fewer years
Has worked 5–8 years
Has worked 9–13 years*
Has worked more than 13 years*

Married 1951 or earlier *and*
Has *not* worked since marriage/worked 6 or fewer years
Has worked 7–10 years
Has worked 11–20 years*
Has worked more than 20 years*

*Including "working continuously" where appropriate.

30. *Age completed full-time education* (*husband and wife*)

31. *Husband's socio-economic group*

Managerial:	Registrar General's Socio-economic groups†	1, 2, 3, 4, 13
Non-manual workers:	Registrar General's Socio-economic groups†	5, 6, 7, 12
Skilled manual workers:	Registrar General's Socio-economic groups†	8, 9
Other manual workers and miscellaneous:	Registrar General's Socio-economic groups†	10, 11, 14, 15, 16, 17

†Classification of Occupations 1966.

32. *Social mobility*

Husband's father and husband in non-manual occupations
Husband's father in non-manual and husband in manual occupations
Husband's father in manual and husband in non-manual occupations
Husband's father and husband in manual occupations
Unclassifiable

33. *Religion*

Husband and wife both Christian but not Catholic
Husband: Christian (not Catholic)/Wife: Catholic
Husband: Catholic/Wife: Christian (not Catholic)
Husband: Catholic/Wife: Catholic
Husband: non-Christian*/Wife: non-Christian*
All other combinations
*includes atheist, agnostic

34. *Attitudes*

The main items comprising the five attitudes together with their factor loadings are given below.

Factor 1. Children are an encumbrance	*Factor Estimation Weights*
Item	
Children tie you down too much	0·37
Children get on your nerves	0·32
Children are selfish; it's all give and no take having children	0·31
Women only have babies because they feel they ought to have babies	0·27
Most women find motherhood satisfying	−0·22
Given the choice, most women would not be without children	−0·20

34. (continued)

Factor 2. Concern with overcrowding and over-population *Item*	*Factor Estimation Weights*
People will have to stop having large families because we are over-populated	0·35
These days, schools are over-crowded because too many children are being born	0·34
When children grow up, there will be so many people, it will be difficult to get jobs	0·34
If you keep on having babies, you have no time for yourself	0·23
Most women don't want to accept the responsibility of looking after several children	0·17

Factor 3. Relevance of material conditions *Item*	
New clothes specially for him rather than handed down	0·39
A nice home for inviting friends round	0·35
Toys like those of children he plays with	0·32
A separate bedroom for each child when they are teenagers	0·32
A lot of individual attention from parents	0·25

Factor 4. Motherhood and children are satisfying *Item*	
You always find the happiest families are those with a large number of children	0·30
Having children is just a natural instinct in women	0·26
As you get older, it's nice to have young children of your own about the house	0·26
Sometimes, women feel they simply must have another baby	0·22
Training in sharing things with others	−0·20

Factor 5. Child's need for siblings and training in sharing *Item*	
Training in sharing things with others	0·48
At least one brother or sister	0·45
Several brothers and sisters	0·29

35. *Country of birth*

Wife: England, Scotland, Wales, Northern Ireland, Australia, New Zealand, Canada	Husband: As wife
Wife: England, Scotland, Wales, Northern Ireland, Australia, New Zealand, Canada	Husband: Eire, Europe

35. (continued)

Wife: Eire, Europe	Husband: England, Scotland, Wales, Northern Ireland, Australia, New Zealand, Canada.
Wife: Eire, Europe	Husband: Eire, Europe
Wife: Eire, Europe	Husband: all remaining countries
Wife: India, Pakistan, Ceylon	Husband: India, Pakistan, Ceylon
Wife: India, Pakistan, Ceylon	Husband: all remaining countries
Wife: Caribbean, W. Indies	Husband: Caribbean, W. Indies
Wife: Caribbean, W. Indies	Husband: all remaining countries
Wife: All remaining countries	Husband: all codes

36. *Age (wife's) by which family is said to be completed*

    (1) For those who do *not* expect more children in the future (Summary 17a) informant's age at last live birth.

    (2) For those intending to have more children, answers to the question "How old do you think you will be when you have your last child?"

For any further information about the definitions used in the questionnaire, enquiries should be addressed to

Social Survey Division
Office of Population Censuses and Surveys
Atlantic House
Holborn Viaduct
London E.C.1.

APPENDIX D

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APPENDIX E

DISCRIMINANT ANALYSIS: COEFFICIENTS OF PROBABILITY DENSITY FUNCTIONS

Discriminant Analysis:

	4 groups								2 groups			
Date of marriage	1950–54				1955–59				1950–54		1955–59	
Number of children	0–1	2	3	4 or more	0–1	2	3	4 or more	2 or fewer	3 or more	2 or fewer	3 or more
Variables												
1. Future fecundity	1·40	1·84	1·90	1·90	1·37	1·90	2·03	1·86	1·56	1·78	1·66	1·86
2. Husband socio-economic group	2·36	2·06	2·34	2·42	2·74	2·27	2·62	2·74	2·26	2·47	2·50	2·78
3. Age completed full-time education	3·51	3·84	3·62	3·61	3·99	3·79	3·94	4·08	3·64	3·53	3·90	4·04
4. Number of wife's sibs.	0·55	0·52	0·57	0·65	0·57	0·64	0·64	0·65	0·54	0·60	0·61	0·62
5. Number of husband's sibs.	0·33	0·36	0·40	0·49	0·38	0·36	0·44	0·68	0·34	0·42	0·37	0·51
6. Relative income	2·19	2·17	2·43	2·59	1·82	1·97	2·45	2·73	2·18	2·50	1·91	2·50
7. Q.15	2·90	2·87	2·68	2·65	4·71	5·00	4·74	4·60	2·90	2·69	4·90	4·65
8. Social mobility	1·86	1·93	1·85	1·82	2·58	2·57	2·59	2·47	1·89	1·82	2·59	2·50
9. Attitudes: Factor 1	−0·36	−0·46	−0·23	−0·04	−0·23	−0·44	−0·19	0·11	−0·40	−0·14	−0·35	−0·06
10. Attitudes: Factor 2	−0·41	−0·29	−0·68	−0·97	−0·02	0·10	−0·33	−0·70	−0·36	−0·81	0·04	−0·46
11. Attitudes: Factor 3	0·30	0·22	−0·15	−0·22	0·23	0·15	−0·24	−0·25	0·28	−0·15	0·19	−0·23
12. Attitudes: Factor 4	−0·28	−0·04	0·11	0·57	−0·13	0·40	0·90	1·30	−0·21	0·18	0·16	0·89
13. Attitudes: Factor 5	0·11	0·47	1·02	1·10	−0·26	0·40	0·66	1·10	0·23	0·94	0·10	0·62
Constant	−17·26	−19·06	−19·87	−20·96	−21·10	−22·34	−24·35	−25·43	−18·06	−19·94	−21·83	−24·44
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